Alternative Trading Systems Directory September 2010





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Foreword

The year since we launched our first edition of the A-Team Alternative Trading Directory has passed by in a flash (no pun intended). And while the rate of expansion of the alternative trading system sector may have slowed – even consolidated somewhat – in the more established centres, their onward march continues both in terms of credibility, and of uptake in pastures new.

In the most mature of ATS markets – the US – the alternative liquidity venue landscape has been marked by the coming of age of key venues. Most notably, the former 'alternative' venues operated by Bats Global Markets and Knight Securities, have lost their 'alternative' tag and emerged as credible and highly liquid exchanges.

In Europe, where MiFID ushered in a rush for the ATS hills, liquidity appears to have settled in a few key alternative markets, giving the traditional exchanges a run for their money. But there's a whiff of consolidation in the air. The highly primed Turquoise venture is now part of London Stock Exchange. Nasdaq OMX Europe discontinued its Neuro dark pool. Nyfix's EuroMillennium vaporised following its parent's acquisition by NYSE Euronext. And as we go to press, the European marketplace is abuzz with talk of an approach to ATS market leader Chi-X Europe, possibly from Bats.

Against that backdrop of fragmentation fatigue, new ATS markets are emerging, as new technologies encourage upstarts to take a shot at the incumbents. As of September 2010, current hotspots include Canada, where a raft of alternative venues have gained momentum against the dominant exchange group TMX; the Nordic region, where the introduction of the high-speed INet trading platform by Nasdaq OMX markets has spurred high frequency trading, which in turn has boosted demand for alternative venues like Burgundy; and Tokyo, where the deployment of the Arrowhead trading platform by the Tokyo Stock Exchange has had a similar impact.

Indeed, many operators are turning to Asia, essentially virgin territory when it comes to high-performance trading platforms. As such, the likes of Chi-X Global, NYSE Technologies, Nasdaq OMX and others have moved to work with local players to establish new alternative liquidity sources.

In short, the ATS space very much remains a dynamic one – and one that warrants watching as it unfolds over the next 12 months.

Once again, we are indebted to Fidessa for its continued support of the Alternative Trading Systems directory.

Andrew Delaney,

Editor-in-Chief, A-Team Group

AlternativeTrading Systems **Directory**

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For more information about A-Team Group **www.a-teamgroup.com**

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Fidessa



Fanning the Flames of Fragmentation: Next-Generation Smart Order Routing Takes Hold

By Ian Salmon, Head of Enterprise Business Development, Fidessa



There can be little doubt that the rollout of MiFID in 2007 brought about significant structural changes to the financial markets.

Fragmentation really took hold in the majority of European markets with trading across the new and alternative execution venues leading to increased competition for the oncemonopolised business of the established exchanges. Now, there are signs that the lit markets are stabilising and maturing, and we're already beginning to see a degree of consolidation among some of the alternative trading venues. The past year has witnessed the seemingly inexorable rise of dark venues and, while European dark volumes have been relatively modest to date, they are growing rapidly.

Ultimately, the new look European market will both require and drive greater development and functionality in smart order routers (SORs) as brokers seek out the best available liquidity across a variety of different trading venues.

SOR provision is by no means a new phenomenon. It is already widely available and take up is increasing, albeit with regional

variations. Best execution has now become part of the trading lexicon. But there is a legitimate debate taking place about whether SOR has become commoditised since the ability to sweep available liquidity across the markets to get the best price has become widely understood and widely deployed. Naturally, that debate is confined to trading on lit venues, which is where the majority of SOR development has focused to date.

That argument holds water – but only up to a point. The widespread adoption of SOR on lit venues should not hide the levels of sophistication that have been added to the process in the last two-and-a-half years. From merely deploying the Europe-specific, MiFID-inspired requirements that defined how SORs were to work, brokers began adding on a variety of USPs to differentiate their service. That sophistication has moved in a number of different directions and has also, to a degree, been driven by innovation within new lit venues.

A new generation of SORs has developed to manage a more complex set of requirements. Core functionality manages routing to auctions, trading capacities, odd lots, minimum sizes, clip and tick sizes and instrument fungibility. Then there's the extra layer of complexity required to manage heat mapping, comparison of latency of different venues, a more sophisticated passive placement, likelihood of trading, multi-sweeping for hidden orders and monitoring tactics that don't disadvantage the order book priority. All of these have a place within the SOR repertoire.

The demand for this next generation of SORs is set to increase as firms reap the benefits of trading on an increasingly broad range of liquidity venues, especially at the darker end of the trading spectrum. Tools are already available to support the search for hidden

liquidity. SORs with dark-seeking capability have been available for some time, although not as widely used as their lit counterparts, and are able to leverage both the hidden inter-spread orders of the lit markets and dark pools in the same algorithmic process. Aggregators are also enabling one-stop access to some of the 30 or 40 dark pools now in operation.

As SOR and algorithmic processes increasingly facilitate interaction with these venues, brokers are finding their dark trading volumes are rising. Increases to 20% of total trading volume are consistently being achieved today.

It is essential that next-generation SORs are required to be dark-aware across the entirety of the spectrum, but there are significant challenges in achieving this. Central to this are the routes and order types supported by the different types of venue. In addition, in order to truly add value, next-generation SOR functionality must take account of the fact that the sweeping process for interacting with non-displayed liquidity is fundamentally different from that required for lit trading.

When it comes to dark and 'grey' pools, firms require the tools that enable them to use one or a series of interchangeable SOR steps to interact speculatively in sequence with sweeping lit exchanges. For dark pools, these new SORs have incorporated data analytics and the creation of heat maps that enable traders to target markets with dynamic strategies rather than adopting a static approach to sweeping.

However, although dark routing capabilities allow brokers to seek liquidity in as many different dark pools as they can access, increasingly the first port of call is their own crossing engine. There are signs that high-margin OTC business is experiencing greater

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levels of electronification across the blocktrading business. Indeed, there is a growing emphasis on internal crossing and dark trading of institutional order flow, which follows in the footsteps of existing methods of working smaller clips of orders.

It is generally accepted that between 5% and 8% of a firm's institutional order flow could be internalised. Brokers accessing their own and others' dark pools in combination with the use of dark SOR and dark-seeking algos are reporting significantly higher levels of dark pool trading than this. Buy-sides with block flow are looking for brokers to have some sensitivity around how the order is worked and for potential added value to be derived from these internal crossing opportunities.

There are some obvious advantages to this expansion in internalisation and dark trading, including cost savings, better execution quality and a lessening of market impact. Not only are brokers avoiding crossing the spread to do business, they also have no need to pay exchange fees.

Above all, next-generation routers must be robust, high performance and easily adapted to evolving market conditions, not least because CESR's discussions of MiFID II indicate further changes in legislation around systematic internalisation, dark pools and broker pools. The introduction of new directives may well define what brokers can do in terms of their interaction with these venue types. Additionally it seems likely that the rules on post-trade reporting will be tightened.

The availability of higher quality data and the identification of its source will result in more reliable heat-mapping and a better illustration of which dark pools to interact with. Regulation covering broker crossing networks and operators of dark venues will also

become more exacting, implying that above certain volume thresholds they will be obliged to register as MTFs. Arguably, this makes the choice and type of interaction clearer, as well as improving transparency of the resultant volumes traded on each one.

The next generation of routers will not be static or monolithic applications. Instead, they will strike the balance between a black-box programmable system and a more adaptable, robust solution that will enable firms to configure their own analytics tools. Brokers will be able to mix and match different sub-units of functionality to interact flexibly with the full range of liquidity venues and accommodate innovation from the markets without requiring re-engineering at every stage. And whereas advanced functionality will be critical, the greater emphasis will be on how this can be configured to the firm's advantage.

As this new generation of SORs take hold it will be interesting to see how they affect fragmentation and, ultimately, the success of alternative venues of all shades and sizes. It will no doubt fan the flames of this phenomenon, at least in the short term, as brokers become more sophisticated in seeking out where the best liquidity truly lies.



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Europe, Middle East, Africa

Barclays LX Liquidity Cross

Category: In Europe, LX is an unregistered Broker Crossing System.

Owners: Barclays Capital

Target Audience: European equity markets Business Model: LX Liquidity Cross is Barclays Capital's dark crossing network that aggregates unique liquidity from our global client base, market structure investments, and internal trading desks. By providing access to multiple segments of liquidity in the equities markets, LX allows Barclays Capital to maximize crossing opportunities for our clients. LX is a true dark pool where no client order information is published.

Main Features:

User-Defined Access: Clients have the ability to configure which types of trading counterparties they interact with when taking and providing liquidity. They are also able to set minimum execution quantity parameters. Anti-Gaming Surveillance: Client performance in LX is monitored by the Electronic Product Group to prevent gaming. Reports are available to determine performance against different client segments in LX. Clients have the ability to define different interaction models in LX for taking and providing liquidity.

Price Improvement: When order limits overlap, price improvement is provided to both trading parties based on an 80/20 breakdown for providers and takers, respectively.

Reliable Technology: The scalable architecture on which LX is built is capable of handling 50 million orders per day in the U.S., with an average roundtrip latency of less than 2 milliseconds. In the US, LX is being hosted in Savvis's NJ2 data centre, offering sub-millisecond execution and collocation for direct clients.

Active: Plans to expand LX into Europe in 2010.

Members: All sources of flow are targeted to provide differentiated and valuable liquidity to clients. Flow types in LX include Barclays Capital's internal trading desks, institutional trading clients, retail order flow partners, and select broker dealers and electronic liquidity providers.

Users: Buy side and sell side **Instruments Traded:** Equities, DRs and ETFs

Philosophy: The Barclays Capital Electronic Trading team is dedicated to providing superior technology, service, and customisation to clients. Underlying Barclays Capital's liquidity strategy is a sustained commitment to offering clients best-in-class infrastructure and diverse liquidity. Management: Danielle Ballardie, Vice President, Electronic Trading Services

Tel: +44 (0) 20 7773 8500

Email: EEE@barclayscapital.com **Web:** www.barx.com/equities/liquiditycrossing.html

BATS Europe

Category: MTF

Owners: BATS Global Markets

Target Audience: European equity markets Business Model: With an extremely low cost base, BATS Europe offers standard pricing that is comparable or better than the top volume tier offered by primary listing exchanges to members. BATS Europe also does not charge for many of the services that exchanges levy on members including membership, connectivity and market data.

Main Features: The BATS Europe MTF consists of an anonymous central Integrated Book, with visible and non-displayed liquidity, a Dark Pool with non-displayed liquidity only, a smart order routing (SOR) service, and after hours trading service.

Active: October 2008. Trading in 15 European markets. Average daily market share of 8-10% FTSE 100 and more than 5% of the FTSE 250, MIB, CAC 40, DAX, SMI, AEX, and OMXH25.

Members: Applicants must be either an EEA regulated investment firm or credit institution Users: Participants can offer clients direct access through the sponsorship scheme Instruments Traded: Equities, Exchange-Traded Funds, Exchange-Traded Commodities, and Exchange-Traded Currencies

Philosophy: BATS Europe is an innovative and technology-leading Multilateral Trading Facility focused on Making Markets Better by bringing greater efficiency and reliability to traders with high capacity/low latency technology, deep liquidity, aggressive pricing and world-class customer service.

Management: Mark Hemsley, CEO Tel: +44 (0) 20 7012 8906 Email: SalesEurope@batstrading.com

Web: www.batstrading.co.uk

Blink

Category: Internal Crossing Network
Owners: CA Cheuvreux

Target Audience: Internal Institutional Clients Business Model: Designed to match retail. institutional, algorithmic, program and directmarket-access flow coming into the firm, with a focus on European equities

Main Features: Since the broker-dealer is an agency broker, clients would not be crossing with any proprietary orders

Active Since: November 2008 **Members:** Institutional clients only Hears: Not disclosed

Instruments Traded: Equities

Philosophy: Just as the trend in the US has been for the major broker-dealers to create internal crossing engines, this may now be seen in Europe as well

Management: Bertrand Patillet, Executive

Vice President

Tel: +33 1 41 89 70 00 Email: execution@cheuvreux.com Web: www.cheuvreux.com

Category: Internal Crossing Network Owners: BNP Paribas

Target Audience: Internal Institutional

Clients

Business Model: Not disclosed Main Features: Apart from the regular benefits, such as reduced market impact and opportunity cost provided by dark pools, BIX provides anonymous, non-displayed order posting and trading in a unique pool of liquidity, offering all parties the opportunity for price improvement

Active: 2007

Members: BIX is utilized by BNP institutional and retail (aggregated flows) clients with various types of order flow as well as BNP algorithms, smart routing and proprietary husinesses

Users: Not disclosed **Instruments Traded:** Equities Philosophy: Not disclosed Management: Not disclosed Tel: +44 (0) 20 7595 1144 Email: Not disclosed Web: www.bnpparibas.co.uk

Burgundy Category: MTF

Owners: Swedbank, Handelsbanken, SEB, Kaupthing, Carnegie, Nordnet, Ohman, Avanza, Evli, Neonet (Orc Software), DnB Nor, Danske Bank, HQ Bank and Nordea Target Audience: Nordic Equity Markets.

Business Model: Offer trading in equities listed in Stockholm. Oslo and Copenhagen. Aim to ensure high liquidity, low transactional costs, short response times and best execution

Main Features: Consortium Appeal to rival LSE/Turquoise. Regional focus as benefit to Nordic Banks/Brokers

Active: May 2009 Members: 21 Hears: N/A

Instruments Traded: Equities

Philosophy: Aims at taking on Nasdag OMX and the London-based MTFs that offer trading in Nordic equities. Desire to have a real Nordic focus on the equity market

Management: Olof Neiglick, CEO

Tel: +46 8613 1200 Email: info@burgundy.se Web: www.burgundy.se

Chi-X Europe

Category: MTF

Owners: Chi-X Europe is the largest pan-European equities MTF and is owned by a group of shareholders, all of which have minority stakes: BNP Paribas, Citadel, Citigroup, Credit Suisse, Fortis, GETCO Europe, Goldman Sachs, Instinet Holdings (owned by Nomura), Merrill Lynch, Morgan Stanley, Optiver, Societe Generale and UBS

Target Audience: the global institutional investment community seeking to trade European equities, ETCs and ETFs.

Business Model: Chi-X Europe operates the largest pan-European equities marketplace, offering trading in over 1,200 stocks across 15 countries in addition to ETCs and ETFs. Active: March 2007

Members: Chi-X Europe has approximately 115 participants.

Users: Global institutional investment community seeking to trade European equities, ETCs and ETFs

Instruments Traded: European Equities, ETFs and ETCs.

Philosophy: Chi-X Europe was launched in March 2007, in anticipation of MiFID. Chi-X Europe's aim was to drive down the overall costs of trading and clearing in Europe by introducing a low cost competition for trading European equities. Chi-X Europe continues to work with industry and market participants to further reduce the frictional cost of trading in Europe and to improve the overall quality and size of the equities markets.

Europe, Middle East, Africa

Management: Alasdair Haynes, CEO Tel: +44 (0) 20 7131 3333 Email: europe.sales@chi-x.com Web: www.chi-x.com

Citi Match

Category: Internal Crossing Network

Owners: Citi

Target Audience: Internal Institutional

Clients

Business Model: Citi Match allows institutional flow, orders from the firm's internal desks, and flow from Citi algos to rest within its system to match up against retail flow.

Main Features: Citi's internal flow includes orders from its sales traders, traders, program traders and other internal desks.

Active: December 2007
Members: Not disclosed
Users: Buy side

Users: Buy side Instruments Traded: Equities

Philosophy: Citi Match's new and broader customer base is intended to push its executions higher. Focused on creating a mechanism whereby all ATD flow and Citi flow – Smith Barney, Lava, Citi's various desks and

algos – can wash through one box.

Management: Chris Jackson, Director of

Electronic Execution Sales Tel: +44 (0)20 7986 4000 Email: Not disclosed Web: www.citi.com

Crossfinder

Category: Internal Crossing Network

Owners: Credit Suisse

Target Audience: Internal Institutional Clients

Business Model: Crossfinder, Credit Suisse's internal crossing network, anonymously matches buy and sell orders

Main Features: The largest broker crossing system in Europe (by published volume), Crossfinder offers clients immense liquidity, anonymity, and the ability to execute large blocks of stock with less impact than would be likely in the public markets

Active: 2004

Members: Not disclosed

Users: CrossFinder is available to all Credit

Suisse clients

Instruments Traded: Equities, FX
Markets: Amsterdam, Brussels,
Copenhagen, German, Helsinki, Ireland,
Johannesburg, Lisbon, London, Ireland,

Madrid, Milan, Oslo, Paris, Stockholm, SWX Europe, Vienna

Management: Europe – George Andreadis **Tel:** +44-207 883 0386

Email: george.andreadis@credit-suisse.com

Web: www.credit-suisse.com

Equiduct

Category: Regulated Market

Owners: Citadel, Boerse Berlin, Knight

Capita

Target Audience: European Equity Markets. Business Model: Equiduct offers a unique market model based on two2 trading segments: an electronic central limit order book and a 'Best Execution' segment targeting retail type flow.

Main Features: In its unique Best Execution segment, Equiduct combines the liquidity of all lit venues in a single market and offers via bilateral agreements with market makers the guarantee of best execution under the protected environment of a regulated market. It also offers a simple and flexible post-trade organisation, based on home CCPs.

Active: Spring 2009

Members: Institutional brokers, online brokers, prop trading houses, hedge funds, market makers, algorithmic traders.

Users: Buy and Sell Side

Instruments Traded: Equities

Philosophy: Equiduct offers a range of services to enable financial institutions to meet their statutory commitments to provide best execution and transparency to their clients for all equity instruments listed on the EEA in a single point of contact and cost effective manner.

Management: Peter Randall, CEO Tel: +44 (0) 20 3102 4080 Email: sales@equiduct.com Web: www.equiduct-trading.com

Instinet BlockMatch

Category: Crossing Network

Owners: Instinet

Target Audience: Institutional Investors in

Business Model: Instinet BlockMatch is a continuous, block trading dark pool for pan-European equities that aggregates liquidity across Instinet's European order infrastructure and through reciprocal links to selected external dark pools. BlockMatch does not send IOIs or route orders and uses

an ultra-low latency to minimize opportunity

Main Features: BlockMatch is a pan-European buy-side matching network. BlockMatch Closing Cross, operating as continuous cross 16:40 to 17:00 UK time.

Active: June 2008 Members: Not disclosed

Users: Access available through Instinet or a range of third-party brokers and EMS providers

Instruments Traded: Equities

Philosophy: Designed to give clients the capacity to trade blocks with each other to find their natural counterparty and reduce market impact.

Management: Richard Balarkas, CEO of

Instinet Europe

Tel: +44 (0) 20 7154 8450 Email: alexandra.foster@instinet.co.uk

Web: www.instinet.com

Knight Link Europe

Category: Systematic Internaliser Owners: Knight

Target Audience: Retail and sell-side. Business Model: Knight Link is an electronic access point into Knight's deep, off-exchange liquidity

Main Features: Knight Link Europe offers rapid order execution in more than a thousand pan-European large, mid and small-cap equities bringing together execution of institutional and retail flow on a single platform.

Active: Q4 2009 release in Europe (Q3 2007 in U.S.)

Members: N/A

Users: Retail and sell-side **Instruments Traded: Equities**

Philosophy: Knight Link is aimed at clients looking for stock execution with little or no market impact, high fulfilment rates and low transaction costs

Management: Kee-Meng Tan, Managing Director

Tel: Kee-Meng Tan: +44 (0) 20 7997 7778. Didier Bankole: +44 (0) 7997 7823

Email: ktan@knight.com, dbankole@knight. com, knightlink.europe@knight.com Web: www.knight.com/knightlinkeurope

Liquidnet

Category: Block trading platform. Owners: Liquidnet.

Target Audience: Global buy side. Business Model: Liquidnet is an electronic marketplace built exclusively for its buy-sideonly Member community, facilitating efficient equities trading for asset management firms worldwide. Liquidnet brings together institutional investors to execute large blocksized orders directly and anonymously - with improved prices and minimised market impact.

Main Features: Cross-border trading through Liquidnet Europe means using a single broker instead of multiple parties for multiple markets. Liquidnet Europe uses only one clearing firm for all international trades. Expanded trading hours and international trading capabilities allow Members to actively trade with one another from 2 a.m. to 6 p.m. (New York time). Liquidnet's UK trade executions print to the London Stock Exchange and are counted with the existing market volume traded through the exchange. Active: November 2002. Liquidnet now offers trading access to 36 equities markets

around the world. Members: Our community includes 598 of

the top large buy-side institutions. **Users:** Active Members. Instruments: Block equities.

Philosophy: Liquidnet Europe simplifies the complex process of cross-border trading by removing the barriers that erode trading performance. This gives Members seamless, efficient institutional-sized executions. Members can access liquidity across major markets through a single trading platform.

Management: John Barker, Head of **European Operations**

Tel: +44 (0) 20 7614 1600

Email: salesdesklondon@liquidnet.com

Web: www.liquidnet.com

Liquidnet Supernatural

Category: MTF

Owners: Liquidnet Europe

Target Audience: Global buy side Business Model: When they create a Supernatural order, Members can safely and intelligently interact with leading liquidity providers - called Streaming Liquidity Participants (SLPs) - as well as Liquidnet's buy-side-only natural pool and external markets. Members gain access to actionable liquidity from a majority of Europe's dark liquidity providers, whilst waiting for an optimal natural block match.

Europe, Middle East, Africa

Main Features: A Supernatural order's liquidity is sourced from the natural pool, inbound streaming liquidity from the SLPs (including brokers, MTFs, and exchanges), and external markets. With Liquidnet's intelligent Supernatural trading strategies, the client controls what liquidity to access and how aggressively to trade.

Active: Launched in Europe in Q4, 2009.

Members: Not disclosed Users: Active Members Instruments Traded: Equities

Philosophy: Supernatural, by safely delivering even more actionable liquidity, minimises market impact and maximises price improvement – while protecting the anonymity of the order and being subject to Liquidnet's strict monitoring of trading activity.

Management: John Barker, Head of European Operations

Tel: +44 (0) 20 7614 1600 Email: salesdesklondon@liquidnet.com

Web: www.liquidnet.com

MLXN

Category: Internal Crossing Network
Owners: Bank of America Merrill Lynch
Business Model: The Bank of America
Merrill Lynch internal crossing network (MLXN)
is designed to leverage the vast pool of
liquidity available within the firm, from retail
orders to large institutional block orders and
offers clients access to substantial global
liquidity.

Main Features: Low alpha crossing opportunities minimize adverse selection. Sophisticated anti-gaming logic to protect clients' orders. Anonymous, fully electronic continuous crossing at parent and child order level. Maximised crossing opportunities with centralised flows across internal and external clients.

Active: Not disclosed

Members: Not disclosed

Users: MLXN is a feature of the firm's global algorithmic and Smart Order Routing offering. It is used as a feature of the electronic trading suite by institutional clients such as hedge funds, mutual funds, broker-dealers and Bank of America Merrill Lynch's trading desks.

Instruments Traded: Equities

Management: Mark Wheatley, Managing Director

Tel: +44 (0) 207 996 2608

Email: ElectronicTradingSales@baml.com

Web: www.baml.com

MS Pool

Category: Internal Crossing Network

Owners: Morgan Stanley

Target Audience: Internal and external Clients

Business Model: MS Pool combines external orders from Morgan Stanley's retail, institutional and broker-dealer clients, as well as algorithmic flow and orders from the firm's internal trading desks. The latter include the cash, program and proprietary desks. Customers are able to opt out of trading against flow from these internal desks in MS Pool

Main Features: MS Pool seeks to reduce market impact and overall transaction costs by executing quickly and efficiently at or within the published best Bid and Offer. MS Pool is one of a number of points of liquidity utilised by Morgan Stanley's dark liquidity router – Nightvision – and its various stealth trading strategies, in executing trading flow. Nightvision and Morgan Stanley's suite of trading strategies allow customers to set a minimum execution quantity to ensure larger execution sizes with zero to negligible latency added to the execution of orders.

Active: September 2006
Members: Not disclosed

Users: Institutional asset managers, hedge

funds and retail

Instruments Traded: Equities

Philosophy: Morgan Stanley's order handling practices ensure the full protection of client orders pre, intra- and post-trade. Further, the firm provides its clients with complete transparency on how their orders are routed and where their trades are

executed.

Management: Brian Gallagher, Morgan Stanley Electronic Trading (MSET), European Equity Markets

Tel: +44 (0) 20 7425 3222 (1-888-465-2554 from US).

Email: mset-eu@morganstanley.com **Web:** www.morganstanley.com

Nomura

Category: MTF-registered Internal Crossing Network. Nomura was the first investment bank to register its internal dark pool as an MTE

Owners: Nomura

Target Audience: Institutional and (non-stat)

hedge fund clients

Business Model: NX provides Nomura's

global electronic client base with anonymous access to its available dark liquidity. NX as a venue encourages block liquidity through the use of advanced anti-gaming controls and flexible controls for clients. Improved post-trade transparency is possible due to MTF status. Liquidity is contributed through client flow and complemented by flow from internal cash, program, delta one, derivatives and balance sheet management desks. This structure provides clients with a broad range of crossing opportunities in terms of both trading universe and investment themes. Nomura does not operate systematic internalisers or market making strategies within the pool; in addition, there is no high frequency trading within NX, and Nomura maintains the ability to regulate what flow types clients cross against

Main Features:

Turnover levels - Nomura continues to provide its clients with significant liquidity. NX is the fourth ranked dark pool across Europe in terms of turnover.

Multiple crossing levels - Nomura offers crossing on a traditional dark pool mid-point basis, in addition to child order 'touch and go' via its smart order router or through direct use of IOC orders. In addition, NX is the first pool to offer to provide clients with a greater opportunity to cross against orders working on overlapping time horizons. This provides a significant uptick in crossing rates, and orders are filled on a realised VWAP basis for the duration matched. Nomura obtained a specific CESR transparency waiver around strategy crossing.

Advanced anti-gaming logic - NX incorporates sophisticated logic that protects clients against adverse behaviour. This includes the use of a random timed mid-price crossing cycle in the dark order book to ensure clients are protected against any opportunistic 'pinging', in addition to 'well-formed market checks' to regulate participant behaviour.

Client configurable - Clients can determine the nature of their executions with the ability to specify their initial and subsequent fill sizes as well any residual quantities they would be willing to accept.

Active: April 2007 (previously under Lehman Brothers)

Members: Not disclosed. **Users:** Nomura clients

Instruments Traded: Equities, ETFs Philosophy: Nomura believes aggregation of dark liquidity remains a key interest to clients, but should not be provided at the expense of increased information leakage. Nomura will continue to explore third-party aggregation options as they become viable, but will maintain strict controls around how client orders will interact with available options.

Management: Adam Toms, Co-Head of EMEA Electronic & Programs; Andrew Bowley, Head of European Product Management

Tel: +44 (0) 207 103 5485 Email: nx.eu@nomura.com Web: www.nomura.com/nx

NYSE Arca Europe

Category: MTF

Owners: NYSE Euronext

Target Audience: Global markets for users

of NYSE Euronext platforms

Business Model: NYSE Arca Europe is NYSE Euronext's pan-European Multilateral Trading Facility (MTF). NYSE Arca Europe extends the trading scope of Euronext's regulated markets by adding blue-chip stocks from 13 European countries and the U.S.

Main Features: NYSE Arca Europe provides easy and transparent access to pan-European and U.S. equities. Integrated with existing NYSE Euronext systems, it offers clients ultralow latency, high throughput and very low fees. It features a central limit order book trading a select group of top liquid stocks from Austria, Denmark, Finland, Germany, Ireland, Italy, Norway, Sweden, Switzerland, Spain, Hungary, Czech Republic, UK and US.

Active: Spring 2009

Members: NYSE Arca Europe members

Users: NYSE Arca Europe users **Instruments Traded: Equities**

Philosophy: NYSE Arca Europe's offering is unique due to its integration with NYSE Euronext, combining the flexibility of an MTF with the trading expertise and resources of a leading global exchange. Featuring a central order book, NYSE Arca is operated on NYSE Euronext"s market-leading Universal Trading Platform.

Management: Virginie Saade, Head of NYSE Arca Europe

Tel: +31(0)20 550 4685 Email: naesales@nyx.com Web: www.nyse.com/arcaeurope

Europe, Middle East, Africa

NYSE SmartPool

Category: European Dark pool Owners: Created by NYSE Euronext in partnership with HSBC, JP Morgan and BNP Paribas.

Business Model: SmartPool is an exchangeled trading platform matching buyers and sellers in a non-displayed environment. SmartPool is a multilateral trading facility (MTF) approved and regulated by the UK Financial Services Authority (FSA).

Main Features: SmartPool enables institutional investors who want to trade promptly, anonymously and in bulk, the opportunity to execute their transactions with reduced market impact, at improved execution prices, through SmartPool's midpoint matching algorithm, and with access to what it believes is the most diverse dark trading community in Europe.

Active: SmartPool launched in February 2009

Users: SmartPool is open to all international professional market participants Instruments Traded: SmartPool offers trading in all major blue-chip and selected mid-cap indices across 15 European equity markets, including securities listed on the four NYSE European markets.

Philosophy: The SmartPool value proposition is built around two core differentiators: community and scale: Community – In November 2009, SmartPool successfully migrated to NYSE Euronext's next-generation Universal Trading Platform (UTP). Via UTP, SmartPool can access a Europe wide client distribution network of over 220 firms (already 'on-net') and build a non-homogeneous trading community to differentiate SmartPool in a way which our rivals will find hard to replicate.

Scale – By leveraging the Universal Trading Platform, our European cash customers are now able to access the regulated markets, NYSE Arca Europe and SmartPool via the same gateways, protocols and market data platform on the same matching engine; a cost efficient single point of connectivity for dark and lit pools.

Management: SmartPool is based in London, and has its own management team and an independent board of directors. Les Hodgkinson, CEO.

Tel: +44 (0) 207 379 2535
Email: info@tradeonsmartpool.com
Web: www.tradeonsmartpool.com

Pipeline Financial

Category: ATS and MTF. Pipeline's execution service switches between over 100 algorithms, as well as a crossing network, and a service that develops custom trading strategies.

Owners: Pipeline Financial Group
Target Audience: Buy and sell-side traders
in the US and Europe

Business Model: Pipeline Financial Group operates institutional electronic brokerages in the US and Europe. Using proprietary technologies and data analysis, Pipeline partners with individual buy-side firms to maximize alpha capture from trade execution. Pipeline's predictive capabilities help buy-side clients capture the equity and option liquidity they need, while minimising implementation shortfall. Pipeline solutions enable measurable and significant improvements to an institution's trading cost structure, a direct contribution to alpha capture.

Main Features: Pipeline's unique Switching Engine incorporates real-time predictive analytics to switch between algorithms in the execution of an order to maximize access to liquidity and minimize adverse selection. Pipeline's Block Market crossing network employs Contra Targeting technology to enables traders to accept large block contras without the gaming risk associated with blotter scraping. Liquidity Builder technology predicts the availability of large blocks that can be assembled across multiple venues including options markets, and then assembles the block at NBBO price if a client wants to match if

Pipeline's new Alpha Pro service generates custom strategies for traders, who can choose an entire strategy—uniquely created for them, or a standard strategy from Pipeline—in a single click. Alpha Pro can also generate a complete suite of custom strategies for an entire firm, and then predict, for every order at the moment of arrival, the trading strategy likely to generate the most alpha.

Pipeline's Program Trading desk seeks to combine trading expertise with innovative proprietary trading tools to deliver performance driven results. The program trading team offers a full range of sophisticated program trading services and access to multiple liquidity sources. The Program Trading Desk operates on an agency only basis and provides total execution anonymity.

Pipeline's Blind Bid Options Cross - BBOX - is a unique user-friendly facility that links buy-side options traders with block option liquidity, without triggering the problems that can accompany a traditional request for a quote.

Active: EU - October 2009 (US - September 2004)

Members: Not disclosed Users: 430 firms

Instruments Traded: Equities and Options Philosophy: Substantial research team provides unique solutions based on advanced technology, particularly in the application of market data analysis to the development of trading strategies and the execution of large orders

Management: Marcus Hooper, Executive Director, Europe; Fred Federspiel, CEO; Alfred Berkeley, Chairman; Henri Waelbroeck, Director of Research; Jim Fiesel, Managing Director, Head of Global Sales.

Tel: +1 (800) 1644-1644 Email: sales@pipelinefinancial.eu Web: www.pipelinefinancial.eu

POSIT

Category: POSIT is registered as an MTF and operates as a crossing network.

Owners: Investment Technology Group (ITG) Target Audience: Global Equity markets **Business Model: ITG's POSIT crossing** destinations give buyers and sellers opportunities to match equity orders with complete confidentiality, access to diverse liquidity pools, no market impact and the cost savings of midpoint pricing.

Main Features: POSIT is indispensable for active, passive and quantitative trading styles. It covers domestic and international stocks as well as listed and OTC. POSIT is also a top venue for small, illiquid names and offers a unique after hours cross.

Active: 1998

Members: Buy and Sell Side **Instruments Traded: Equities**

Philosophy: Designed to enable institutions to trade anonymously in block size and thus prevent adverse market impact.

Management: Robert Boardman, CEO, ITG

Tel: +44 (0) 207 670 4000 Email: info@itg.com Web: www.itg.com

Ouote MTF

Category: MTF

Owners: Quote MTF is 60%-owned by BRMS Holding, a Canada-based company with activities in securities exchanges, trading and software and 40%-owned by management and staff.

Business Model: A truly pan-European approach that leverages sophisticated technologies to provide subscrib-ers with a simple, easy to access and low latency platform for trading pan-European stocks at competitive price rates. Liquidity is provided by committed high-frequency market makers motivated to offer EBBO.

Main Features: Offers the lowest liquidity removal fee (0.14 basis points) in Europe and free trading when adding liquidity without any other hidden costs added, such as minimum monthly fees and the like.

Active: September 2009 Members: Not disclosed Users: Buy and sell side firms **Instruments Traded: Equities**

Philosophy: That the market deserves an alternative, no-frills business model geared to reducing complexity and driving down costs to the benefit of the European trading community. Wants to keep things as simple and competitive as possible to create a 'onestop shop' venue in Europe.

Management: Tamás Madlena. CEO: Christian Bower, Head of Sales and Marketing,

Tel: +44 7768 028028 Email: sales@quotemtf.com Web: www.quotemtf.com

Swiss Block

Category: Dark Pool and Block Trading Platform

Owners: SIX Swiss Exchange

Target Audience: European equity markets **Business Model:** Providing a secure and high performance non-displayed trading venue, Swiss Block ensures that the international investment community can extend their electronic and automated trading strategies to the largest and most liquid stocks that comprise the SLI Swiss Leaders Index

Main Features: Swiss Block offers all of the benefits of trading on SIX Swiss Exchange, including its dual CCP model for post trade processing. SIX Swiss Exchange was the first exchange-owned dark pool in Europe.

Active: August 2008

Europe, Middle East, Africa

Members: Exchange members, investors and intermediaries

Users: Not disclosed

Instruments Traded: Swiss Equities
Philosophy: There is increasing demand
for such venues as order sizes on displayed
order books are becoming smaller because
of the growth of algorithmic-driven trading.
Institutions increasingly want to execute large
trades without revealing their intentions to the
broader public market

Management: Christian Katz, CEO, SIX Swiss Exchange

Tel: +41(0) 58 854 23 76; +44 20 78 64

Email: member.services@six-group.com **Web:** www.six-swiss-exchange.com/ participants/trading/swiss_block_en.html

TOM MTF

Category: MTF (along with the TOM Smart Execution smart order router, TOM MTF is one of two platforms operated by The Order Machine).

Owners: Binckbank, Optiver and ABN AMRO Clearing

Target Audience: European equity market participants and European derivatives later this year.

Business Model: Once it goes live during the second half of 2010, TOM MTF will facilitate the matching of buy and sell orders in an advantageous and transparent manner. TOM MTF runs on the Nasdaq OMX Click system, hosted at Nasdaq OMX's Lunda data centre in Stockholm.

It is complemented by TOM Smart Execution, a smart order router designed by Quod Financial. TOM Smart Execution searches a variety of trading platforms, including TOM MTF, to find the best possible price at which an order can be executed. Participating institutions can become direct member of TOM MTF or become a client of TOM Smart Execution to obtain a MiFID-qualified best execution.

Main Features: Significant retail volumes from the start due to support of Binckbank, the Netherlands' largest retail bank with 50% of retail volumes and 390,000 active clients. Pending Dutch regulatory approval, TOM MTF reckons it will be the first MTF in Europe with a license to operate a derivatives MTF. ABN AMRO Clearing Bank currently acts as the clearing party for transactions carried out through TOM. EMCF, Europe's largest cash

equities clearing company, will act as central counterparty (CCP) guaranteeing delivery and payment of equity trades.

Active: TOM will formally launch after summer 2010.

Members: Banks (retail order flow providers), arbitrage traders, brokers and market makers. **Users:** Buy and Sell side

Instruments Traded: Top 50 Dutch equities, with plans for expansions into other geographic markets and derivatives.

Philosophy: TOM's goal is to become Europe's first broker providing MiFID best execution services for retail order flow. TOM MTF expects to reduce European transaction costs by expanding the range of assets available for trading via MTF.

Management: Willem Meijer, CEO Tel: +31 20 31 49 616 Email: services@tomgroup.eu Web: www.tomgroup.eu

Tradeweb

Category: MTF

Owners: Tradeweb LLC

Target Audience: North American, European and Asian Fixed Income, Derivatives and Equity markets

Business Model: Tradeweb is a leading provider of online markets and a pioneer in the development of electronic trading and trade processing. The company provides services in the fixed income, derivative, and equity markets to clients in more than 50 countries.

Main Features: Over 2,000 institutional clients have access to pricing from more than 40 dealers on the world's largest online fixed income and derivatives marketplace for institutional clients. Tradeweb also operates rapidly growing business in the inter-dealer and retail sector.

Active: Launched in 1998, continual development of different products

Members: Asset managers, banks, central banks and hedge funds connect up to the Tradeweb network to access over 40 dealers **Users:** Buy and Sell Side

Instruments Traded: Government Bonds, Derivatives, Spread Products, Money Market and Credit products

Philosophy: To become an increasingly valued partner to the buy-side and sell-side community. Today's markets can move in a split second. That's one reason why Tradeweb has operations, including data

centres, in the US, Europe and Asia. Being close to its markets ensures that Tradeweb can provide the best service to clients in their own time zone. With a highly experienced technology team, Tradeweb aims to offer the most complete network for executing and processing fixed income and derivative trades.

Management: Lee Olesky, Chief Executive

Tel: +44 (0) 207 776 3200

Email: Europe.clientservices@tradeweb.com

Web: www.tradeweb.com

Turquoise

Category: MTF

Owners: Majority owned by the London Stock Exchange Group

Target Audience: European equity markets Business Model: Independent-led MTF, supported by 12 of the largest global investment firms.

Main Features: Offers an integrated book with hidden order functionality, a mid-point price referencing dark book and a dark aggregation service, TQ LENS. Single point of entry for those already connected to or hosted at the London Stock Exchange.

Active: September 2008

Members: Sell-side broker dealers with European presence

Users: (as above)

Instruments Traded: European and US cash equities, including ETFs and ADRs.

Philosophy: Provide a competitive, low cost and efficient way to trade pan-European securities.

Management: David Lester, CEO Tel: +44 (0) 20 7382 7600 Email: info@tradeturquoise.com Web: www.tradeturquoise.com

UBS PIN

Category: Internal Crossing Network

Owners: UBS

Target Audience: Institutional investors and

Hedge Funds

Business Model: UBS PIN is UBS's internal order flow network-a signal-free environment in which users can interact with quality liquidity from institutional and retail agency orders. The bank designed this internal network to be as natural as possible and 100% non-displayed, so there's no market impact.

Main Features: UBS PIN provides access to a natural-only, 100% dark pool which

operates continuous crossing on a strict price/time priority basis. PIN in EMEA is available in Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Israel, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Turkey and the UK.

Active: UBS began offering crossing capabilities in EMEA in early 2005, and launched UBS PIN in 2006.

Members: N/A

Users: UBS PIN in EMEA is available to all Direct Execution clients executing agency orders as well as to agency algorithmic order flow from UBS's strategic alliances.

Instruments Traded: European Equities **Philosophy:** UBS believes that crossing is about the client: its goal is to deliver quality execution and a consistent experience, not preference its own liquidity and increase its advertised crossing rate. UBS carefully considers its liquidity partners to ensure only the highest quality execution. Because UBS believes that dark liquidity should be dark, it does not use IOIs and only participates in venues where it is confident in that information leakage risk is fully managed. UBS provides complete transparency in the post-trade process, so clients know how, where and when their orders were executed.

Management: Tim Wildenberg, Head of UBS Direct Execution - EMEA

Email: directexecutionservices@ubs.com Web: www.ubs.com/directexecution

Tel: +44 (0) 20 7568 8313

A-TEAMINSIGHTMULTIMEDIA

A-Team Citihub Video Series: Low Latency Connectivity Solutions Sponsored by Interxion

This video series has been designed to help market practitioners understand the various commercial offerings in the marketplace for building high-performance trading infrastructures that can take advantage of today's increasingly high-speed markets.



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Alpha

Category: ECN

Owners: BMO Nesbitt Burns, Canaccord Capital, CIBC, CPP Investment Board, Desjardins Securities, National Bank Financial, RBC Dominion Securities, Scotia Capital, TD Securities

Target Audience: Canadian Equities markets Business Model: Alpha is a continuous order platform, where trading occurs on a price-time priority basis. A distinguishing feature of Alpha is the considerable equities trading experience and resources that the dealers bring to the ATS

Main Features: Not disclosed **Active:** September 2008.

Members: It will be open to all dealer institutions who are members of the Investment Industry Regulatory Organization of Canada (IIROC).

Users: Not disclosed

Instruments Traded: Equities.

Philosophy: Alpha aims to improve equities trading, competitiveness and market liquidity in Canadian capital markets

Management: Jos Schmitt, CEO

Tel: +1 (647) 259-0405
Email: mailbox@alphatradingsystems.ca
Web: www.alphatradingsystems.ca

Aqua

Category: Block Trading Platform
Owners: Cantor Fitzgerald and BGC Partners
Target Audience: Global Equity Markets
Business Model: The model aims at
modernising block trading between the buy
side and the sell side, which had not advanced
beyond traditional methods because of
concerns over sensitive order information
seeping into the market.

Main Features: Aqua harnesses buy-side OMS liquidity to facilitate anonymous trading between the buy side and brokers.

Active: January 2007

Members: Mostly buy side, institutional block traders and portfolio managers

Users: Buy and sell side Instruments Traded: Equities

Philosophy: Playing to market demand for new ways to access block liquidity. Institutions and brokers the world over are attracted by the opportunity to access unique, untapped pools of new liquidity, and Aqua will deliver what the marketplace wants

Management: Kevin Foley, CEO. **Tel:** +1 (212) 821-1100

Email: sales@aquaequities.com **Web:** www.aquaequities.com

Barclays LX Liquidity Cross

Category: In the US, LX Liquidity Cross is an Alternative Trading System registered under SEC Rule 300(a) of Regulation ATS, under the Securities Act of 1934, commonly referred to as a dark pool.

Owners: Barclays Capital

Target Audience: US equity markets Business Model: LX Liquidity Cross is Barclays Capital's dark crossing network that aggregates unique liquidity from our global client base, market structure investments, and internal trading desks. By providing access to multiple segments of liquidity in the equities markets, LX allows Barclays Capital to maximize crossing opportunities for our clients. LX is a true dark pool where no client order information is published.

Main Features:

User-Defined Access: Clients have the ability to configure which types of trading counterparties they interact with when taking and providing liquidity. They are also able to set minimum execution quantity parameters.

Anti-Gaming Surveillance: Client performance in LX is monitored by the Electronic Product Group to prevent gaming. Reports are available to determine performance against different client segments in LX. Clients have the ability to define different interaction models in LX for taking and providing liquidity.

Price Improvement: When order limits overlap, price improvement is provided to both trading parties based on an 80/20 breakdown for providers and takers, respectively.

Reliable Technology: The scalable architecture on which LX is built is capable of handling 50 million orders per day in the U.S., with an average roundtrip latency of less than 2 milliseconds. In the US, LX is being hosted in Savvis's NJ2 data centre, offering sub millisecond execution and collocation for direct clients.

Active: Barclays Capital launched LX in the US in 2008.

Members: All sources of flow are targeted to provide differentiated and valuable liquidity to clients. Flow types in LX include Barclays Capital's internal trading desks, institutional trading clients, retail order flow partners, and select broker dealers and electronic liquidity providers.

Users: Buy side and sell side

Instruments Traded: All Reg-NMS Names Philosophy: The Barclays Capital Electronic Trading team is dedicated to providing superior technology, service, and customization to clients. Underlying Barclays Capital's liquidity strategy is a sustained commitment to offering clients best-in-class infrastructure and diverse

liquidity.

Management: William Libby, Vice President, **Electronic Trading Services**

Tel: +1 (212) 526-1130 Email: EST@barclayscapital.com Web: www.barx.com/equities/ liquiditycrossing.html

BIDS ATS

Category: Block Trading Platform Owners: Bank of America/Merrill Lynch, Barclays Capital, Citi, Credit Suisse, Deutsche Bank, Goldman Sachs, JPMorgan Chase, Knight Capital, Morgan Stanley, NYSE Euronext

Target Audience: BIDS ATS is designed to bring counterparties together to anonymously trade large blocks of shares. BIDS Trading ATS resolves the classic paradox of the block trader - the need to find legitimate trading counterparties without prematurely revealing trading intentions.

Business Model: The BIDS Trading ATS is open to all qualifying broker-dealers and their institutional clients, subject to basic credit and regulatory requirements. The primary goal of BIDS Trading is to build an open network of buy side and sell side firms.

Main Features: The BIDS Trading ATS is designed to level the playing field for block trading and to treat all firms the same. It is highly customizable and anonymous.

Active: Spring 2007

Members: Block Traders, Broker dealers and sponsored users, buy side, asset managers, hedge funds.

Users: Buy and sell side **Instruments Traded: Equities**

Philosophy: Aims to create a highly liquid, low-cost, industry-sponsored service for block traders. The BIDS ATS is a block-crossing network that is designed to maximize the ability to execute large orders.

Management: Tim Mahoney, CEO Tel: +1 (212) 618-2060 Email: info@bidstrading.com

Web: www.bidstrading.com

Block Cross

Category: Block Trading Platform, ATS Owners: Pulse Trading

Target Audience: US Equities

Business Model: Allows buy-side traders to stay uncommitted and receive opportunities inbound. With a 5,000 minimum share size, BlockCross has two modes of trading: Confirmation, with an average print size of 55,000; and Auto-Ex, with an average print size of 17.000.

Main Features: Blotter integration with most OMS/EMSs allows for best execution driving to provide the broadest spectrum of block liquidity.

Active: May 2007

Members: Not disclosed

Users: Buy-side block-trading community. Instruments Traded: Equity Blocks. Management: Mark Enriquez, Managing Partner, Pulse Trading

Tel: +1 (617) 850-7000 Email: support@blockcross.com Web: www.blockcross.com

Bloomberg Tradebook

Category: Agency Broker/ECN Owners: Bloomberg LP

Target Audience: US Equity, Global Equity. Futures, Options and FX markets

Business Model: Bloomberg Tradebook provides brokerage services for electronic direct market access, algorithms and analytics for trading equities, futures, options and FX instruments

Main Features: Bloomberg Tradebook is a leading global agency broker that provides direct market access and a breadth of trading analytics and algorithms to institutional traders that seek maximum alpha on every market transaction. Clients are in charge of driving their own trades-whether it's a single security or a large program, with the support of Tradebook's agency execution consultants to help find and manage opportunities.

Active: 1996

Members: Used by institutional traders, broker-dealers, hedge fund managers, marketmakers and portfolio broker managers.

Users: Buy and Sell Side

Instruments Traded: Equities (ETFs, preferreds, stock and REITs); Futures (financial, energy, commodity); Options (on Equities and Futures) and Spot FX.

Philosophy: Founded in 1996, Tradebook offers its customer base multi-asset, multicurrency trading solutions to actively manage complex trading strategies in over 60 global markets. Investment advisors, money managers, hedge funds, proprietary desks and broker dealers around the world rely on Tradebook's trading solutions for equities, futures, options and foreign exchange trading. Management: Raymond M. Tierney III, CEO & President of Bloomberg Tradebook LLC

Tel: +1 (212) 617-7070
Email: TBdesk@bloomberg.net
Web: www.bloombergtradebook.com

Citi Match

Category: Internal Crossing Network **Owners:** Citi

Target Audience: Internal Institutional Clients Business Model: Citi Match allows institutional flow, orders from the firm's internal desks, and flow from Citi algos to rest within its system to match up against retail flow.

Main Features: Citi's internal flow includes orders from its sales traders, traders, program traders and other internal desks.

Active: December 2007 **Members:** Not disclosed **Users:** Buy side

Instruments Traded: Equities
Philosophy: Citi Match's new and broader
customer base is intended to push its
executions higher. Focused on creating a
mechanism whereby all ATD flow and Citi flow
- Smith Barney, Lava, Citi's various desks and

algos – can wash through one box **Management:** Chris Jackson, Director of Electronic Execution Sales

Tel: +1 (212) 793-0710 **Email:** Not disclosed **Web:** www.citi.com

ConvergEx Cross

Category: Block Trading Platform Owners: ConvergEx (Bank of New York Mellon)

Target Audience: Designed for both buyers and sellers by accessing both institutional and broker order flow

Business Model: The ConvergEx Cross is an innovative solution that provides anonymous execution at the midpoint with natural buy-side contraparties, providing the benefits of zero market impact trading and price improvement that only pure block crossing can offer — all on clients' own terms. Connecting is through a

simple OMS or EMS permission change and a light web-based application download.

Main Features: Trade anonymously in deep pools of liquidity without revealing sensitive information. ConvergEx Cross automatically polls OMS/EMS blotters for interest and identifies potential opportunities to negotiate a block cross without giving 'free looks'. The ConvergEx CrossBoard gives clients the ability to anonymously send and receive symbolonly indications (SOIs) to the ConvergEx Cross trader community. The CrossBoard provides valuable insight into upstairs liquidity, offering the opportunity to react to undisplayed committed liquidity or attract liquidity when it's hard to find. Connecting to ConvergEx CrossBoard is via simple download and desktop install.

Active: April 2007

Members: ConvergEx Cross is currently available on the Eze OMS, Bloomberg EMSX and RealTick EMS

Users: Buy and Sell side Instruments Traded: Equities

Philosophy: ConvergEx looked at how to best meet demand for liquidity post RegNMS and decided to develop a crossing product to address their trading requirements.

Management: John Tzannes, Product Manager of BNY ConvergEx Group Tel: (212) 259-5524 Email: JTzannes@convergex.com

Crossfinder

Category: SEC-registered Alternative Trading System (ATS)

Owners: Credit Suisse

Web: www.convergex.com

Target Audience: All clients of Credit Suisse Business Model: Crossfinder, Credit Suisse's dark pool, anonymously matches buy and sell orders

Main Features: The largest US dark pool according to independent research reports from Tabb and Rosenblatt as of April 2010, Crossfinder offers clients immense liquidity, anonymity, and the ability to execute orders with less impact than would be likely in the public markets.

Active: 2004

Members: Not disclosed

Users: Crossfinder is available to all Credit

Suisse clients

Instruments Traded: Equities

Philosophy: Crossfinder is a pure dark matching system, where matching is based on

time/price priority.

Management: Dmitri Galinov, Head of Crossfinder

C103311110C1

Tel: +1 (212) 325-2044

Email: dmitri.galinov@credit-suisse.com **Web:** www.credit-suisse.com

CrossStream

Category: SEC-registered Alternative Trading System (ATS)

Owners: Fidelity Capital Markets, a division of National Finance Services LLC

Target Audience: Not disclosed

Business Model: As part of Fidelity

Business Model: As part of Fidelity Investments, with \$1.5 trillion in assets under custody, Fidelity Capital Markets delivers a natural source of diverse liquidity provided by our various leading financial services business lines.

Main Features: Liquidity – CrossStream offers a distinct advantage in the search for liquidity by aggregating order flow from Fidelity's brokerage businesses: 1,000 institutional clients through Fidelity Capital Markets; 5.3 million accounts with more than 300 clients, ranging from retail broker_dealers to institutional investment firms, through National Financial Services (figures as of March 31, 2001; source: Fidelity unaudited data).

Anonymity – Operated as a nonquoted, nondisplayed dark book, CrossStream is a completely anonymous, SEC-registered Alternative Trading System (ATS). Without any information leakage, CrossStream provides access both to large, liquid names that can be moved in bulk and to a wide range of smaller, less liquid issues that are difficult to trade in the public markets.

Performance – CrossStream accepts a number of advanced order types for precise control over how clients interact with our liquidity. Key features include:

- Advanced order types, including market, limit, pegging, discretion, derivative pricing (midpoint, last sale, bid, offer, and percentage of National Best Bid and Offer [NBBO] spread), and minimum execution quantity
- Matching logic within the NBBO spread that helps ensure quality executions with minimal market impact
- Pro rata allocation algorithm that helps ensure fair allocation of prints without constantly yielding to larger blocks or orders

placed earlier

Active: November 2006

Members: Not disclosed

Users: All types of users, including retail investors, institutions, hedge funds, investment advisers and correspondent broker-dealers

Instruments Traded: US Equities

Management: Michael Cashel, Senior Vice

President and Head of Equity

Tel: +1 (888) 595-0589

Email: ETC@fmr.com

Web: www.fidelitycapitalmarkets.com

GETCO Execution Services

Category: ATS

Owners: GETCO LLC

Business Model: Essentially runs as a dark market-making venue, a very simple, straightforward market where GETCO is the sole liquidity provider and enters firm buy- and sell side quotes into the system. Any brokerdealer can be a customer and take liquidity Main Features: GES executes trades only when there is a match at the National Best Bid and Offer (NBBO) or better. Subscribers send immediate or cancel orders (IOC) to the ATS and receive, on average, a sub-millisecond response for a fill, partial fill or cancel, GES is structured to eliminate subscriber risk for gaming or information leakage. There are no indications of interest (IOI) feeds or orders routed out of the ATS, and unexecuted individual order information is never disclosed.

Active: March 2008

Members: GETCO has approximately 75 subscribers to date, which are a mix of retail, institutional & agency firms.

Users: Sell Side

Instruments Traded: Equities & FX
Philosophy: GETCO wanted to find a way
to interact with the increasing amounts of
liquidity that do not make it to the public
markets. Thus, the firm aimed to develop a
simple formula which provides customers with
access to its significant liquidity

Management: Drew Krichman **Tel:** + 1 (646) 747-0034

Web: www.getcoexecution.com

Email: dkrichman@getcoexecution.com

Instinet BLX

Category: Hybrid Continuous/Point-in-Time Block Crossing Network

Owners: Instinet (owned by Nomura)

Target Audience: Institutional clients (agency-only)

Business Model: Optimised to interact with the small sized, algorithmic orders common today, Instinet BLX aggregates buy/sell orders and triggers a passive cross when matchable volume grows to a specified size, thereby 'building' a block trade.

Main Features: BLX utilizes and innovative, unique block-trading paradigm that dynamically initiates point-in-time crosses within a continuous crossing framework.

Active: September 2009
Members: Not disclosed

Users: Access available through Instinet or a range of third-party brokers and EMS providers

Instruments Traded: Equities
Philosophy: Designed to allow clients to
effectively trade blocks despite the small
sized, algorithmic orders common today.
Management: Jonathan Kellner, President,

North America Contact: Instinet US Sales

Tel: +1 (877) 467-8463
Email: newaccountsales@instinet.com

Web: www.instinet.com

Instinet U.S. Crossing

Category: Point-in-Time Block Crossing Network

Owners: Instinet

Target Audience: Institutional clients (agency-only)

Business Model: Comprised of 11 daily crossing matches in the US, Instinet Crossing provides opportunities to trade large blocks with complete anonymity and minimal market impact at benchmark or midpoint prices, including WWAP and market-close.

Main Features: Instinet Crossing, which includes the industry's first crossing network (the Instinet overnight cross, launched in December 1986), allows clients to trade at benchmark or mid-point prices, including VWAP and market-close, while meeting various strategic goals across differing investment styles.

Active: December 1986
Members: Not disclosed

Users: Access available through Instinet or a range of third-party brokers and EMS providers.

Instruments Traded: Equities

Philosophy: Designed to allow clients to trade large blocks with complete anonymity

and minimal market impact.

Management: Jonathan Kellner, President,

North America

Tel: +1 (877) 467-8463

Email: newaccountsales@instinet.com **Web:** www.instinet.com

Knight Link

Category: Source of off-exchange liquidity

Owners: Knight

Target Audience: Buy- and sell-side Business Model: Knight Link is an electronic access point into Knight's deep, off-exchange liquidity

Main Features: Knight Link offers rapid order execution in more than 7,300 listed and Nasdaq securities with a strong focus in difficult-to-trade names. More than 65% of executed volume on Knight Link is made up of small- and mid-cap securities

Active: Q3 2007 Members: Not disclosed

Users: Buy- and sell-side Instruments Traded: Equities

Philosophy: Knight Link is aimed at clients looking for little or no market impact, high fulfillment rates and low transaction costs **Management:** Jamil Nazarali, Managing

Director

Tel: Erica Attonito: +1 (201) 386-2833; Tara Muller: +1 (201) 557-6904 Email: Erica Attonito: eattonito@knight.com

Tara Muller: tmuller@knight.com

Web: www.knight.com

Knight Match

Category: ATS
Owners: Knight

Target Audience: Buy and sell side Business Model: Knight Match provides clients access to Knight's unique liquidity that is made up of institutional, retail, internal liquidity and algorithmic order flow, as well as flow from Knight's external relationships.

Main Features: Clients can benefit from Knight Match's strength in small- to midcap stocks across a wide range of sectors. Knight Match is accesible via Knight Direct, Knight's Algorithmic Suite, Knight's sales traders or FIX.

Active: Relaunched September 2008

Members: Not disclosed Users: Buy and sell side Instruments Traded: Equities Philosophy: Knight Match provides anonymous access and trade execution at a low cost with opportunities to obtain significant price improvement.

Management: Joe Wald, Managing Director Tel: Joe Wald: +1 (212) 479-2335;

Erica Attonito: +1 (201) 386-2833 Email: Joe Wald: jwald@knight.com; Erica Attonito: eattonito@knight.com

Web: www.knight.com

LeveL ATS

Category: Crossing Network Target Audience: US Equity markets Business Model: LeveL ATS is a registered broker-dealer and unique electronic alternative trading system (ATS). LeveL's innovative structure maximizes liquidity and provides best execution while minimising information leakage and market impact. Driven by low-cost pricing and a low-latency,

highly stable platform, LeveL has seen record growth and has become a leading source for non-displayed liquidity.

Main Features: LeveL ATS is a continuous crossing dark pool that provides the user with highly customisable options to maximise each firm's own trading strategies. LeveL ATS offers two levels of interaction. and two main order types. Level 1 is a whitelabel internal matching engine that allows customers to match their own sources of internal flow without the high cost of building and maintaining the technology themselves. The LeveL 2 matching engine brings together LeveL's diverse flow. Customers utilise two main order types on LeveL ATS: IOC (immediate or cancel) orders or Resting orders, which can rest for a chosen amount of time within the trading day. Additionally, LeveL allows customers to build custom lists of chosen counterparties, enhancing a firm's ability to further control their trading experience. While LeveL never discloses the firms within its pool, it is able to work with customers to build customised lists based on a firm's trading preferences. LeveL has also created a custom order type called SmartBlock, which allows the user to control the rate of execution on a particular order, through pre-defined parameters, should the stock move away from its arrival price. These unique tools combined with LeveL's customer focused business model have helped make it a top destination of dark liquidity.

Active: October 2006

Members: Registered broker-dealers can submit a LeveL Participation Application for approval to trade in the LeveL marketplace.

Users: Buy and sell side

Instruments Traded: US equities

Philosophy: LeveL was created as a need was seen for a new trading environment in a post-Reg NMS world. LeveL takes a consultative approach with its clients; everything from - sales to support - is from a user's perspective. LeveL strives to add value to each trader's process while providing high touch service in a low touch environment.

Management: Whit Conary, CEO Tel: +1 (617) 350-1601

Email: Whit.Conary@LeveLATS.com

Web: www.LeveLATS.com

Liquidnet North America Negotiation

Category: Block trading ATS Owners: Liquidnet Inc. and Liquidnet

Canada Inc.

Target Audience: Global buy side Business Model: Liquidnet is the premier institutional investment community, bringing together the world's largest asset managers and public companies on a single network that directly connects traders, portfolio managers, analysts and listed companies. Main Features: Liquidnet Members

represent 70% of US equity assets under management. Liquidnet has an average US negotiated execution size of 46,624 shares. Liquidnet averages 1.82 billion shares a day of buy-side liquidity in its US natural pool and 9.52 billion shares a day in Liquidnet Supernatural (as of Q1 2010).

Active: Liquidnet launched in the US in April 2001 and in Canada in October 2006, and now offers trading access to 36 equity markets around the world.

Members: The Liquidnet global community includes 598 of the top large buy-side institutions

Users: Buy-side members

Instruments Traded: Equities Philosophy: Liquidnet enables Members of its community to achieve greater performance by moving from investment idea to implementation faster, ultimately retaining more alpha throughout the entire institutional investment lifecycle.

Management: Seth Merrin, President and

CEO

Tel: +1 (646) 674-2000 Email: info@liquidnet.com Web: www.liquidnet.com

Millennium ATS

Category: ATS

Owners: ConvergEx (Bank of New York

Mellon)

Business Model: As a pioneer in dark pool executions, the Millennium ATS is one of the most comprehensive continuous alternative trading systems (ATS) in the US equity market. The Millennium ATS aggregates over 2 billion shares of available liquidity in over 6,000 symbols daily. And offering one of the largest and top-rated agency liquidity pools on the Street, over 100 broker-dealers access its technology daily.

Main Features: Non-Displayed Liquidity – Orders are invisible and partners anonymous regardless of the size of the trade. With a complete end to end solution that supports execution through settlement, clients' identities are fully protected throughout the investment cycle.

Neutral and Flexible – Providing neutral access to a large segment of the equities market, we support multiple order types, offer flexible connectivity options and minimal information leakage and less market impact. Clients also have full control of their orders and can fine tune their strategy by setting parameters while still providing execution within the NBBO.

Liquidity for Less – Our clients take advantage of reduced transaction costs, and our antigaming and pure price priority ensure that clients' interests are put first.

Active: Acquired by ConvergEx December 2009

Members: Open to all. In addition to access provided by NYFIX, users can access NYFIX Millennium through many third-party software providers

Users: Buy and Sell side

Instruments Traded: Equities

Philosophy: Aims to provide investors with a valuable tool for achieving best execution. The Millennium ATS seeks to help investors achieve price improvement, ensure anonymity and reduce market fragmentation through the electronic linkage of various liquidity sources, including exchanges and ECNs.

Management: Brian Carr

Tel: (212) 448-6002 Email: BCarr@convergex.com Web: www.euronext.com

Mismi ATS

Category: ATS

Owners: Mismi Inc.

Target Audience: Mismi's ATS and cutting edge algorithmic trading engine currently focus on US equities.

Business Model: Mismi is an ATS, an Electronic Trading Broker and Technology Provider. Mismi is a neutral broker dealer that is currently focusing on the US equities market. It was spawned out of the need to integrate some of the decision factors considered by portfolio managers into the trade execution process, and developed a new crossing network and an algorithmic trading engine to meet that need.

Main Features: Mismi has developed cutting edge technologies in the following areas: i) An innovative point-in-time portfolio crossing technology that facilitates the matching of portfolios and single-name orders in a dark pool in a way that gives traders the ability to control the characteristics of their baskets during execution; for example, by imposing risk targets, sector and cash exposures. This bridges the gap between portfolio construction and portfolio execution.

ii) A continuous crossing system that provides ultra low-latency single-name matching with novel controls.

iii) A state-of-the-art algorithmic trading suite for single-name orders, portfolios and pairs. Real-time re-optimization adjusts the schedule in response to fluctuations in price, volume, volatility and benchmark behaviour. Optimised limit-order placement and ultra low-latency smart order routing decisions reduce slippage and yield superior debit/credit performance. Together this offers superior price performance and low transaction costs within a neutral un-conflicted environment. Active: Q1 2010

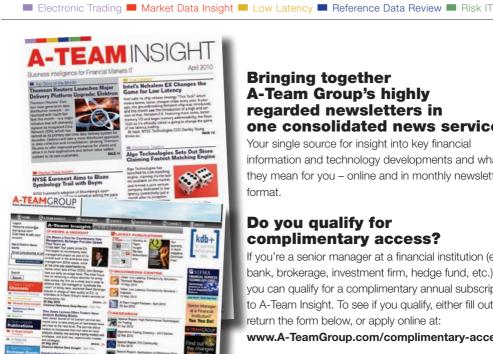
Members: Though it's geared to portfolio-level trading, Mismi also allows trading in single names and allows algorithms to access its liquidity pool

Users: Not disclosed

Instruments Traded: US Equities (currently)
Philosophy: Mismi has developed a
novel crossing network and a state-of-theart algorithmic trading engine. Jointly they
enable traders to have access to cutting edge

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algorithmic trade execution technologies; take advantage of ultra low-latency smart order routing and connectivity services; focus on portfolio level execution in the dark and displayed markets in a fully integrated and holistic manner. This allows traders to incorporate into the execution process many of the portfolio factors that drive, for example, investment decisions or portfolio transition processes.

Management: Andrew Bieler, CEO

Tel: +1 (646) 839-6118 Email: info@mismi.com Web; www.mismi.com

MLXN

Category: Internal Crossing Network (Registered ATS)

Owners: Bank of America Merrill Lynch Business Model: MLXN, the Bank of America Merrill Lynch internal crossing network, is designed to leverage the vast pool of liquidity available within the firm, from retail orders to large institutional block orders and offers clients access to substantial global liquidity. Key Features: Low alpha crossing opportunities minimise adverse selection. Sophisticated anti-gaming logic protects clients' orders. Anonymous, fully electronic continuous crossing at parent- and child-order level. Maximise crossing opportunities with centralised flows across internal and external clients.

Users: MLXN is a feature of the firm's global algorithmic and Smart Order Routing offering. It is used as a feature of the electronic trading suite by institutional clients such as hedge funds, mutual funds, broker-dealers and Bank of America Merrill Lynch's trading desks.

Instruments Traded: Equities Management: Mark Wheatley, Managing Director

Tel: +1 (212) 449-6090

Email: ElectronicTradingSales@baml.com

Web: Not disclosed

MS Pool

Category: Broker Crossing System or ATS Owners: Morgan Stanley

Target Audience: Internal and external

clients

Business Model: MS Pool combines external orders from Morgan Stanley's retail, institutional and broker-dealer clients, as well as algorithmic flow and orders from the firm's internal trading desks. The latter include the cash, program and proprietary desks. Customers are able to opt out of trading against flow from these internal desks in MS Pool.

Main Features: MS Pool seeks to reduce market impact and overall transaction costs by executing quickly and efficiently at or within the published best Bid and Offer. MS Pool is one of a number of points of liquidity utilised by Morgan Stanley's dark liquidity router - Nightvision - and its various stealth trading strategies, in executing trading flow. Nightvision and the firm's suite of trading strategies allow customers to set a minimum execution quantity to ensure larger execution sizes with zero-to-negligible latency added to the execution of orders.

Active: September 2006 Members: Not disclosed

Users: Institutional asset managers, hedge funds and retail

Instruments Traded: Equities

Philosophy: Morgan Stanley's order handling practices ensure the full protection of client orders pre-, intra- and post-trade, Further, Morgan Stanley provides clients with complete transparency on how their orders are routed and where their trades are executed.

Management: Andrew Silverman Tel: +1 (212) 761-8653

Email: mset-na@morganstanley.com

Web: Not disclosed

anonymously

NASDAQ Crossing

Category: Crossing Network Owners: NASDAQ Stock Market Target Audience: US equity markets. **Business Model:** The NASDAQ Crossing Network provides an execution option to market participants trading in NASDAQ and other exchange-listed securities that facilitates the execution of trades quickly and

Main Features: The NASDAQ Crossing Network is a price discovery facility that crosses orders at a single price. The crosses enable market participants to execute on-open and on-close interest and provide unparalleled transparency. Market makers and other industry professionals have repeatedly demonstrated their willingness and ability to offset imbalances that are entered into the cross. The crosses generate opening and closing prices that are widely used by industry professionals including Russell Indexes.

Standard & Poor's and Dow Jones. One of the hallmarks of the NASDAO Crossing Network is the transparency of the order imbalances. This data, called the Net Order Imbalance Indicator (NOII), is disseminated via the NASDAO TotalView data feed, the NASDAQ Data Store, the NASDAQ Cross Net Order Imbalance (NOII) website, the NASDAQ Workstation and numerous market data distributors and service hureaus

Active: June 2007

Members: All NASDAQ market participants from the sell side, and buy-side firms can submit cross orders via their brokers or through Direct Market Access (DMA) platforms. **Users:** Buy and Sell Side

Instruments Traded: Equities.

Philosophy: NASDAQ believes its strength lies within its trading model and market participants. Competition and efficiency require constant evolution, so NASDAQ continually enhances the tools its clients need to trade well.

Management: Brian Hyndman, Senior Vice

President.

Tel: +1 (800) 846-0477 Email: sales@nasdag.com Web: www.nasdagtrader.com

Nomura NX

Category: Internal Crossing Network

Owners: Nomura

Target Audience: Institutional and (non-stat)

hedge fund clients

Business Model: NX provides Nomura's global electronic client base with anonymous access to its available dark liquidity. NX as a venue encourages block liquidity through the use of advanced anti-gaming controls and flexible controls for clients. Liquidity is contributed through client flow and complimented by flow from internal cash, program, delta one and derivatives desks. This structure provides clients with a broad range of crossing opportunities in terms of both trading universe and investment themes. Nomura does not operate systematic internalisers or market making strategies within the pool; in addition, there is no high frequency trading within NX, and Nomura maintain the ability to regulate what flow types clients cross against. Main Features: Multiple crossing levels -Nomura offers crossing on a traditional dark pool mid-point basis, in addition to child-order 'touch and go' via its smart order router or through direct use of IOC orders. In addition,

NX is the first pool to offer to provide clients with a greater opportunity to cross against orders working on overlapping time horizons. This provides a significant uptick in crossing rates, and orders are filled on a realised VWAP basis for the duration matched.

Advanced anti-gaming logic - NX incorporates sophisticated logic which protects clients against adverse behaviour. This includes the use of a random timed mid-price crossing cycle in the dark order book to ensure clients are protected against any opportunistic "pinging", in addition to "well formed market checks" to regulate participant behaviour.

Client configurable - Clients can determine the nature of their executions with the ability to specify their initial and subsequent fill sizes as well any residual quantities they would be willing to accept.

Active: 2009

Members: Not disclosed **Users:** Nomura clients

Instruments Traded: Equities, ETFs

Philosophy: Nomura believe aggregation of dark liquidity remains a key interest to clients. but should not be provided at the expense of increased information leakage. Nomura will continue to explore third-party aggregation options as they become viable, but maintain strict controls around how client orders will interact with available options.

Management: Matt Weitz, Head of Electronic Sales & Trading; Rich Conti, Head of Electronic Sales Trading

Tel: +1 (212) 667-1248 Email: est.us@nomura.com Web: www.nomura.com/nx

NYBX

Category: Block Trading Platform

Owners: NYSE Euronext

Target Audience: US equity markets **Business Model:** NYBX unites the deep liquidity of NYSE with the anonymity, speed and flexibility of BIDS Trading, representing 11 of the largest broker/dealers in the world, to create an innovative approach for accessing block liquidity. NYBX allows non-displayed block liquidity to anonymously access the liquidity of the NYSE market - both displayed and non-displayed liquidity.

Main Features: NYBX matches dark orders by continuously searching the NYSE order book, trading with displayed, reserve and

hidden interest on the NYSE, while keeping order details anonymous. NYBX offers deep liquidity; reduced fragmentation; improved execution, speed and price; complete anonymity; and flexible control of minimum triggering volume.

Active: January 2009

Members: The NYBX is open to all members of the NVSF

Users: Trading is open to all broker/dealers, investment managers, hedge funds and algorithms via a sponsored access model. **Instruments Traded: Equities**

Philosophy: NYBX's block trading strategy seeks to help foster improved liquidity, relative transparency and lower market-impact costs. Management: Joe Mecane, Executive Vice President and Co-Head of US Listings and

Cash Executions, NYSE Euronext

Tel: +1 (212) 656-3000 Email: info@euronext.com Web: www.nyse.com

NYSE Arca

Category: ECN

Owners: NYSE Euronext

Target Audience: Global markets for users of NYSE platforms

Business Model: NYSE Arca is NYSE Euronext's North American ECN, designed to trade both stocks and options as the secondlargest ECN in North America in terms of shares traded. NYSE Arca also provides a fully automated, totally transparent opening auction and closing auction for all stocks. Main Features: NYSE Arca delivers the

advantages of both displayed and dark liquidity, significant transparency and tremendous efficiency. It aims to provide fast execution with open, direct and anonymous market access. Trades are executed both electronically and anonymously at the best available price. Among some of the securities traded on Arca are exchange-traded funds, individual stocks and equity options.

Active: Not disclosed

Members: The new routing service will initially provide access to 29 destinations, which the exchange has not named.

Users: Not disclosed **Instruments Traded: Equities**

Philosophy: Believes that every company deserves a chance to grow on a more

ambitious scale. NYSE Arca's broader eligibility requirements now allow smaller companies that meet their listings standards to join - and

ultimately gain visibility opportunities and access that have never been available to them before.

Management: Joseph Mecane, Executive Vice President, Co-head of U.S. Listing and Cash Execution; Paul Adcock, EVP NYSE Euronext, Head of Trading Operations. Tel: +1 (212) 656-3000

Email: TradingEx@tradearca.com

Web: www.nyse.com

NYSE MatchPoint

Category: ECN

Owners: NYSE Euronext

Target Audience: US equity markets Business Model: NYSE MatchPoint is an electronic equity-trading facility that matches aggregated orders at predetermined fixed times with prices that are derived from primary markets.

Main Features: NYSE MatchPoint is designed to lower transaction costs by providing a passive trading environment, no market impact, consolidated participation and liquidity, with complete control over order information. Participants are provided full anonymity through the order-entry and trade-execution process, NYSE MatchPoint accommodates both single block orders and large portfolios.

Active: January 2008

Members: NYSE member firms and their customers.

Users: Portfolio traders, block traders, algo and DMA providers, prop desks, agency desks, index funds/transitions, mutual funds and hedge funds.

Instruments Traded: Equities

Philosophy: NYSE MatchPoint's business and technology facilities are specifically designed to capture the existing benchmark matching business and to champion nextgeneration benchmark matching.

Management: Paul Adcock, EVP NYSE Euronext, Head of Trading Operations.

Tel: +1 (212) 656-3000 Email: info@euronext.com Web: www.nyse.com

Omega ATS

Category: ECN

Owners: MarLar Group, BRMS and Tactico Target Audience: Canadian Equity markets. Business Model: Full access to live executable prices at the CBBO (Canadian

best bid and offer) for TSX-listed and Venture listed securities. Omega ATS offers the most competitive trading rates for taking liquidity of all visible Canadian marketplaces. Combined with the lowest latency in Canada, clients using algorithmic trading strategies have a strong incentive to preference Omega in their routing logic. For liquidity providers, lowest latency reduces risk while providing the opportunity to be the first to see the flow. Main Features: Omega has the most competitive execution fees of the visible marketplaces and offers the lowest latency of any marketplace in Canada.

Active: December 2007

Members: Subscribers must be dealers registered in one or more provinces in Canada and members of the Investment Dealers Association of Canada

Users: N/A

Instruments Traded: TSX and Venture listed Securities

Philosophy: The Omega ATS team is confident that the combination of its unique structure and market-leading partners will mark the start of an evolution of marketplace liquidity in Canada

Management: Michael Bignell, President

Tel: +1 (416) 646-2427

Email: michael.bignell@omegaats.com **Web:** www.omegaats.com

OnePipe

Category: Dark Pool Aggregator Owners: Weeden & Co., Pragma Securities, LLC

Target Audience: Institutional investor clients from both firms.

Business Model: Designed to be the first Optimal Liquidity Management System built to maximize efficiency and access to nondisplayed liquidity among the multitude of existing passive liquidity sources, also known as dark pools

Main Features: Onepipe unites over 40 dark pools, crossing networks, streaming liquidity venues and open market destinations into a single integrated source. Onepipe is a customisable liquidity solution that will interact with different destinations based on the urgency of your order. Depending upon chosen level, Onepipe will access dark or displayed liquidity, while using its Lifeguard facility to help protect orders from gaming and information leakage.

Active: March 2008
Members: Clients only
Users: Institutional investors
Instruments Traded: Block equities

Philosophy: Onepipe wanted to develop a solution that would expose client orders to the greatest number of passive liquidity sources to give them the greatest chance of trading large blocks with minimal market impact

Management: David Margulies, Head of Electronics Products Group, Weeden & Co.

Tel: +1 (866) 502-2546
Email: dmargulies@weedenco.com

Web: www.pragmatrading.com

Pink Link ATS

Category: ATS

Owners: Pink OTC Markets Inc.
Target Audience: OTC equity markets
Business Model: Pink OTC Markets Inc.
provides the leading inter-dealer electronic
quotation and trading system in the overthe-counter (OTC) securities market. We
offer quotation and order negotiation
services to broker-dealers through a
desktop application and/or a FIX interface.
Pink OTC Markets does not match or
execute trades. We provide a distributed

infrastructure for broker-dealers to find and

access liquidity.

Main Features: Pink OTC Markets offers broker-dealers in US over-the-counter (OTC) securities a quotation and trading platform to publish quotes and communicate with other OTC market participants for order negotiations and executions in OTCQX, OTCQB and Pink Sheets quoted securities. Pink OTC offers connection to its pricing and messaging service via a desktop application (OTC Dealer) and a FIX interface (Pink FIX). Pink OTC services allow brokerdealers to negotiate trades and seamlessly integrate with their existing infrastructure to report and clear transactions

Active: Application process is underway
Members: Broker-dealers

Users: Sell Side

Instruments Traded: OTC Equities
Philosophy: Provide transparency into the pricing and operation of OTC companies through our quotation and trading systems and our OTC Market Tiers which categorise OTC companies based on their disclosure to the marketplace.

Management: R. Cromwell Coulson

Tel: +1 (212) 220-2166. Email: marketdata@pinkotc.com Web: www.otcmarkets.com

Pipeline Financial Group, Inc.

Category: ATS and MTF. Pipeline's execution service switches between over 100 algorithms, as well as a crossing network, and a service that develops custom trading strategies.

Owners: Pipeline Financial Group Inc. Target Audience: Buy and Sell-Side Traders in the US & Europe

Business Model: Pipeline Financial Group operates institutional electronic brokerages in the US and Europe. Using proprietary technologies and data analysis, Pipeline partners with individual buy-side firms to maximise alpha capture from trade execution. Pipeline's predictive capabilities help buy-side clients capture the equity and option liquidity they need, while minimising implementation shortfall. Pipeline solutions enable measurable and significant improvements to an institution's trading cost structure, a direct contribution to alpha capture.

Main Features: Pipeline's unique Switching Engine incorporates real-time predictive analytics to switch between algorithms in the execution of an order to maximise access to liquidity and minimise adverse selection.

Pipeline's Block Market crossing network employs Contra Targeting technology to enables traders to accept large block contras without the gaming risk associated with blotter scraping. Liquidity Builder technology predicts the availability of large blocks that can be assembled across multiple venues including options markets, and then assembles the block at NBBO price if a client wants to match it.

Pipeline's new Alpha Pro service generates custom strategies for traders, who can choose an entire strategy—uniquely created for them, or a standard strategy from Pipeline—in a single click. Alpha Pro can also generate a complete suite of custom strategies for an entire firm, and then predict, for every order at the moment of arrival, the trading strategy likely to generate the most alpha.

Pipeline's Program Trading desk seeks

to combine trading expertise with innovative proprietary trading tools to deliver performance driven results. The program trading team offers a full range of sophisticated program trading services and access to multiple liquidity sources. The Program Trading Desk operates on an agency only basis and provides total execution anonymity.

Pipeline's Blind Bid Options Cross – BBOX – is a unique user-friendly facility that links buy-side options traders with block option liquidity, without triggering the problems that can accompany a traditional request for a quote.

Active: US - September 2004 (EU -

October 2009).

Members: Not disclosed

Users: 430 firms

Instruments Traded: Equities & Options **Philosophy:** Substantial research team provides unique solutions based on advanced technology, particularly in the application of market data analysis to the development of trading strategies and the execution of large orders.

Management: Fred Federspiel, CEO; Alfred Berkeley, Chairman; Henri Waelbroeck, Director of Research; Jim Fiesel, Managing Director. Head of Global Sales.

Tel: +1 (800) 680-PIPE (7473)
Email: sales@PipelineTrading.com
Web: www.pipelinetrading.com

POSIT Marketplace

Category: ATS

Owners: Investment Technology Group

Target Audience: Global Equity markets Business Model: ITG's POSIT crossing destinations give buyers and sellers opportunities to match equity orders with complete confidentiality, access to diverse liquidity pools, no market impact and the cost savings of midpoint pricing.

Main Features: POSIT is indispensable for active, passive and quantitative trading styles. It covers domestic and international stocks as well as listed and OTC. POSIT is also a top venue for small, illiquid names and offers a unique after hours cross.

Active: 1987

Members: Buy and Sell Side Instruments Traded: Equities Philosophy: Designed to enable institutions to trade anonymously in block size and thus prevent adverse market impact.

Management: Robert Gasser, CEO

Tel: +1 (800) 858-4907 Email: info@itg.com Web: www.itg.com

Pure Trading

Category: Auction market system

Owners: CNSX Markets Inc.

Target Audience: Firms trading Canadian exchange-listed securities

Business Model: Pure Trading provides a continuous auction market system using the maker/taker model to encourage market making in Canadian stocks, while offering cost effective transaction services for liquidity seekers.

Main Features: The first alternative auction market system in Canada, Pure Trading offers a high capacity/low latency trading system intended to support the needs of traditional traders and emerging high frequency firms.

Active: September 2007

Members: 90 participating dealers, representing 99% of Canadian trading volume.

Users: Not disclosed

Instruments Traded: TSX- and TSX

Venture-listed instruments.

Philosophy: Pure Trading applies world class technology to deliver cost effective trading services to liquidity providers and consumers with the goal of enhancing the competitiveness of the Canadian cash markets

Management: Ian Bandeen, CEO & Vice

Chairman

Tel: +1 (416) 306-0772 Email: marketops@cnsx.ca Web: www.puretrading.ca

RiverCross ATS

Category: ECN

Owners: Susquehanna International Group Target Audience: Sell-side firms and

broker-sponsored buy-side firms

Business Model: A matching platform that offers continuous crossing services for both block and non-block orders in a secure environment, running in a high-availability, fault-tolerant mode.

Main Features: Susquehanna appears to

be counting on its trading reputation as a nimble non-bulge-bracket firm to win agency flow from other brokers.

Active: May 2008 Members: Not disclosed

Users: Sell side

Instruments Traded: Equities Philosophy: Aims to innovate based on customer feedback and produce valueadded functionality more quickly than other dark pool operators

Management: Paul Onderdonk, Executive.

Tel: +1 (610) 747-2526

Email: customerservice@rxats.com

Web; www.rxats.com

SIGMA X

Category: ATS Owners: Goldman Sachs

Target Audience: Institutional traders

globally

Business Model: Through SIGMA X, Goldman Sachs aims to connect clients to the largest source of non-displayed liquidity available. Our liquidity strategy matches customer-to-customer flow, as well as Goldman Sachs franchise liquidity. SIGMA X offers both continuous and point-in-time matching (X-Cross), Goldman Sachs' global crossing network offering consists of SIGMA X (US), SIGMA (Europe) and SIGMA X (Asia).

Main Features: SIGMA X Block Signals provides users the ability to intelligently communicate and locate block crossing opportunities. Users, posting blocks to SIGMA X, can use Signals to invite potential block contras, to meet them in the pool. These Block Signals represent a 'FIRM' opportunity to cross and reveal only side and minimum block quantity for that symbol.

Active: SIGMA X was launched in 2006 Members: Includes Broker/Dealers,

Institutions and Hedge Funds Users: Buy and Sell side

Instruments Traded: Equities Philosophy: SIGMA X was created as

a means of harnessing the liquidity of both Goldman Sachs Electronic Trading (GSET), as well as the greater Goldman Sachs trading franchise, in an un-displayed liquidity center. Through SIGMA X, GSET aims to provide its customers with both a very sizable and unique pool of liquidity, easily accessible by the firm's trading tools.

Management: Greg Tusar, Head of



Research A-Team Research

A-Team Group's research reports and surveys provide invaluable reference guides to the financial IT industry, whether you need to understand an issue from a strategic industry perspective, size the market, or compare suppliers and their services. No desk should be without them. As well as our published reports, A-Team conducts proprietary and customized market research and surveys specifically for clients, with a focus on reference data and enterprise data management, transaction technologies, market data and trading room infrastructure.

Goldman Sachs Electronic Trading

Tel: +1 (212) 357-2333 Email: gset-news@gs.com Web: gs.com/electronictrading

Track ECN

Category: ECN

Owners: Track Data Corp.

Target Audience: US equity markets Business Model: Track ECN is designed to offer traders who take liquidity the lowest rate for removing liquidity in the industry. Simultaneously, subscribers are offered high rebates providing they add liquidity to the system, with no minimum volume to meet. Main Features: Track ECN offers smart order routing to major markets via direct connections, depth of book data feed and

variety of order entry choices. Active: August 2005 Members: Broker dealers Users: Buy and sell side

Instruments Traded: Equities

Philosophy: Aims to offer low rates for removing liquidity, which in turn attracts those who want to add liquidity due to being where all the 'takers' are.

Management: Marty Kave, CEO Tel: +1 (866) 888-7233 Email: info@trackecn.com Web: www.trackecn.com

TriAct Canada Marketplace -**Match Now**

Category: Crossing Network Owners: ITG Canada Corp.

Target Audience: Canadian Equity markets **Business Model:** Orders for TSX- and TSX Venture-listed securities can be matched passively or swept through Match Now to any another Canadian public marketplace. Executions occur inside the Canadian bidoffer spread. Match Now is a broker-neutral facility; TriAct does not participate as agent or principal in any trade.

Main Features: Offers a new method for matching equity orders with complete confidentiality while helping to ensure best execution.

Active: July 2007

Members: Open to all Canadian dealers and their clients.

Users: Not disclosed

Instruments Traded: Equities

Philosophy: As the Canadian marketplace continues to evolve, customers are seeking alternative liquidity destinations to efficiently meet their trading needs. Match Now offers Canadian dealers and their clients a new method for matching equity orders with complete confidentiality while helping to ensure best execution.

Management: Nick Thadaney, CEO, TriAct Canada Marketplace; Heather Killian, COO, TriAct Canada Marketplace

Tel: +1 (416) 861-1010 Email: info@triactcanada.com Web: www.triactcanada.com

UBS ATS

Category: SEC Registered Alternative Trading System

Owners: UBS

Target Audience: Institutional investors, Broker-Dealers and Hedge Funds

Business Model: UBS ATS is a signal-free environment in which you can interact with all of UBS's US equities liquidity, as well as with institutional agency algorithmic trading flow from our quality liquidity partners.

Main Features: UBS ATS is a continuous crossing facility that executes orders at the midpoint of the NBBO on a strict price/time priority basis. Clients may set a variety of parameters on their UBS algorithmic and DMA orders to control their interaction in PIN, and may choose to opt out of participation with certain types of flow.

Active: May 2008 Members: N/A

Users: UBS ATS is available to Direct Execution institutional and broker-dealer clients, internal UBS desks and our quality liquidity partners, and includes UBS retail client flow

Instruments Traded: US Equities

Philosophy: At UBS, we believe that crossing is about the client: our goal is to deliver quality execution and a consistent experience, not preference our own liquidity and increase our advertised crossing rate. We carefully consider our liquidity partners to ensure only the highest quality execution. Because we believe that dark liquidity should be dark, UBS does not use IOIs and only participates in venues where we are confident in that information leakage risk is fully managed. And, we provide complete transparency in the post-trade process, so you know how, where and when vour order was executed.

Management: Charlie Susi, Head of UBS Direct Execution - Americas

Tel: +1 (203) 719-1750 Email: de-sales@ubs.com

Web: www.ubs.com/directexecution

UBS PIN

Category: Internal Crossing Network

Owners: UBS

Target Audience: Institutional investors and Hedge Funds

Business Model: UBS PIN is an internal crossing network that allows clients' algorithmic orders to cross directly with other UBS institutional agency algorithmic order flow as well as the bank's significant retail

Main Features: UBS PIN provides access to a natural-only, 100% dark pool which operates continuous midpoint crossing on a strict price/time priority basis.

Active: 2006 Members: N/A

client flow

Users: UBS PIN in the US is available to Direct Execution institutional clients and includes

UBS retail client flow.

Instruments Traded: US Equities
Philosophy: UBS believes that crossing is about the client: its goal is to deliver quality execution and a consistent experience, not preference its own liquidity and increase its advertised crossing rate. UBS carefully considers its liquidity partners to ensure only the highest quality execution. Because UBS believes that dark liquidity should be dark, it does not use IOIs and only participates in venues where it is confident in that information leakage risk is fully managed. UBS provides complete transparency in the post-trade process, so clients know how, where and when their orders were executed.

Management: Charlie Susi, Head of UBS

Direct Execution - Americas **Tel:** +1 (203) 719-1750 **Email:** de-sales@ubs.com

Web: www.ubs.com/directexecution

VortEX

Category: ATS

Owners: ConvergEx (Bank of New York

Mellon)

Target Audience: ET Clients

Business Model: VortEx is ConvergEx's highspeed continuous dark pool, combining stateof-the-art low latency technology with one of the deepest sources of agency non-displayed liquidity on the Street.

Main Features: VortEx offers one of the most diverse and unique sources of liquidity on the street including flow from ConvergEx's agency trading desks, institutional clients executing directly through ConvergEx's suite of electronic trading tools and institutional broker-dealers who leverage ConvergEx's execution and settlement services.

Active: April 2007

Members: For direct, systematic connectivity with optimal speed, VortEx can be accessed via high-speed FIX. For trading desk access, VortEx can be reached through every major OMS and EMS platform, including ConvergEx's Fize OMS.

Users: Buy and Sell side **Instruments Traded:** Equities

Philosophy: Agency dark liquidity reduces a client's impact on the markets and provides price improvement to maximize execution performance.

Management: Craig Viani, Head of Electronic

Trading at BNY Convergex **Tel:** (212) 468-8413

Email: CViani@convergex.com **Web:** www.convergex.com

Axe ECN

Category: ECN

Owners: New Zealand Stock Exchange (NZX), Citi, CommSec, Goldman Sachs JBWere, Macquarie Securities and Merrill Lynch (Bank of America)

Target Audience: Australian equity markets

Business Model: AXE ECN plans to offer a high-speed, low-cost market for trading securities listed on the ASX. AXE ECN will create value for customers by including features to overcome structural deficiencies in the existing market or create new, value adding services.

Main Features: Focuses on competition in trading services leading to increased market liquidity, as well as better prices, technology and innovation in market services.

Members: Open to all Users: Buy and Sell side Instruments Traded: ASX-Listed

Securities

Philosophy: AXE ECN aims to provide a competitive choice in a well-regulated and innovative operating environment

Management: Susan Bray, Acting CEO Tel: +64 4 496 2890

Email: Not disclosed
Web: www.axe-ecn.com

BIX

Category: Internal Crossing Network **Owners:** BNP Paribas

Target Audience: Japanese Equity

Markets

Business Model: BIX utilises both the bank's natural liquidity and client flows thus enabling buyers and sellers to anonymously find liquidity without information leakage or market impact. Unlike other broker offerings, BIX is very specific to the Asian market in that it has been built from scratch and launched in Japan.

Main Features: BIX supports crossing within the spread, rather than at the static point of the spread

Active: June 2007

Members: Institutional investors

Users: Not disclosed Instruments Traded: Equities

Philosophy: BIX is not about internalising a client's flow against BNP Paribas' own flows. The aim of BIX is to enable the client to find the other side of the trade through

technology, which is completely dark, but at the same time be completely compliant with the regulators and the execution policy **Management:** Quentin Limouzi, Product Head of Asia and Japan

Tel: +81 3 52 90 8557
Email: Not disclosed
Web: www.bnpparibas.co.uk

BlocSec

Category: Block trading platform/Crossing network/Dark pool liquidity aggregator Owners: CLSA Asia-Pacific Markets Target Audience: Global Investors trading

in the Asian markets

Business Model: The BlocSec platform offers continuous a high-speed electronic platform, with continuous and high speed order matching and execution service. Clients are able to enter orders into the system and have them anonymously matched without the risk of giving away the side, quantity or price of their orders

Main Features: BlocSec is an anonymous matching and crossing network which aims to provide a deep pool of liquidity to those wishing to trade in Asian without distorting the market

Active: May 2008

Members: Institutional Investors

Users: Buy and sell side

Instruments Traded: Equities (Japan, Hong

Kong, Singapore, Australia)

Philosophy: BlocSec's continuous order matching and execution platform allows investors to efficiently execute their block trades which reduces both transaction

costs and market impact

Management: Christian Chan, Director of

Electronic Execution **Tel:** + 852 2600 8880

Email: blocsec_sales@blocsec.com

Web: www.blocsec.com

Citi Match

Category: Internal Crossing Network Owners: Citi

Target Audience: Internal Institutional

Clients

Business Model: Citi Match allows institutional flow, orders from the firm's internal desks, and flow from Citi algos to rest within its system to match up against retail flow

Main Features: Citi's internal flow includes

orders from its sales traders, traders, program traders and other internal desks.

Active: December 2007 Members: Not disclosed

Users: Buv side

Instruments Traded: Equities

Philosophy: Citi Match's new and broader customer base is intended to push its executions higher. Focused on creating a mechanism whereby all ATD flow and Citi flow - Smith Barney, Lava, Citi's various desks and algos - can wash through one box.

Management: Chris Jackson, Director of **Electronic Execution Sales**

Tel: +852 2501 2020 Email: Not disclosed Web: www.citi.com

Chi-East

Category: Pan-Asian, Non-Displayed Crossing Network

Owners: Chi-X Global and Singapore Stock Exchange (50:50 joint venture)

Business Model: The non-displayed trading platform aims to initially offer block crossing facilities for equities listed on SGX, as well as on an offshore basis for the Australia, Hong Kong and Japan exchanges. Main Features: Offers clients a block trading venue in the Asia Pacific region with a deep pool of liquidity whilst retaining anonymity and reducing market impact. Active: Summer 2010

Members: Registered broker/dealers in the respective jurisdictions.

Users: Buy and sell side Instruments Traded: Equities

Philosophy: Focus is on creating the deepest and most attractive dark pool liquidity in the Asia-Pacific region. Believe that users are looking for independent, neutral dark pools with high functionality and deep liquidity, and want this joint venture to be able to deliver it

Management: Ned Phillips, CEO of Chi-Fast

Tel: +65-6808-3299

Email: ned.phillips@chi-east.com

Web: www.chi-east.com

Chi-X Global (Chi-X Japan and Chi-X Australia)

Category: ATS/ECN

Owners: Instinet

Target Audience: Institutional Investors in Japan and Australia

Business Model: Chi-X Global is a global provider of market infrastructure technologies and trading venues in Japan and Australia that aim to provide investors around the world with the most efficient markets possible through their high-speed, low-cost, intelligent trading models

Main Features: Offers a continuous auction market for Japanese and Australian equities; based on strict price/time priority, is fully anonymous and offers advanced order types.

Active: Chi-X Japan - Summer 2010; Chi-X Australia - Autumn 2010

Members: Registered broker/dealers in the respective jurisdictions.

Users: Widespread usage

Instruments Traded: Japanese and Australian equities.

Philosophy: Chi-X Global believes that truly competitive, technology-driven markets benefit all participants in the trading process - investors, brokers and the primary exchanges - by making the market more attractive to the global trading community, which ultimately helps to increase overall market volumes and improve investor performance.

Management: John Lowrey, CEO of Chi-X Global Inc.

Tel: Japan - +81 3 6366 8802: Australia

- +61 2 8078 1700

Email: apac.sales@chi-x.com

Web: www.chi-x.com

Crossfinder

Category: Internal Crossing Network

Owners: Credit Suisse

Target Audience: Internal Institutional

Clients.

Business Model: Crossfinder anonymously matches buy and sell orders. Crossfinder is currently available in Australia, Hong Kong, Japan, and Singapore.

Main Features: As one of the world's largest internal crossing engines, Crossfinder offers clients immense liquidity, anonymity, and the ability to execute large blocks of stock with less impact than would be likely in the public markets.

Active: 2005

Members: Not disclosed

Asia Pacific

Users: Crossfinder is available to all Credit Suisse clients.

Instruments Traded: Equities

Philosophy: Crossfinder is a pure dark matching system, where matching is based on time/price priority.

Management: Murat Atamer, Head of AES Product for Asia Pacific, Hong Kong

Tel: +852 2101 7133

Email: murat.atamer@credit-suisse.com

Instinet CBX Asia

Category: Continuous Displayed Crossing Network

Owners: Instinet

Target Audience: Institutional Clients
Business Model: Real-time electronic
market where traders can execute blocks in
equities listed in Japan and Hong Kong.
Main Features: Ability to trade pre-IPO
and when stocks are limit up/down on
the primary exchange. Provides advanced
order functionality and potential for price/
size improvement. Anonymous agency
execution. Minimum fill functionality.
Includes a Hong Kong closing cross, with
executions repriced to the market closing
price after the close.

Active: February 2004

Members: Not disclosed

Users: Access available through Instinet or a range of third-party brokers and EMS providers.

Instruments Traded: Equities

Philosophy: Designed to give clients the capacity to trade blocks with each other to find their natural counterparty and reduce market impact.

Management: Glenn Lesko, CEO of

Instinet in Asia

Phone: +852 (0)2585 0500

Email: kym.graham@instinet.com
Web: www.instinet.com

Instinet Japan Crossing

Category: Point-in-Time Crossing Network
Owners: Instinet

Target Audience: Institutional Investors

in Japan

Business Model: JapanCrossing provides liquidity in an anonymous and neutral venue for institutional investors trading Japanese equity orders, with a historical focus on small- and mid-cap stocks.

Main Features: JapanCrossing is considered to be the only pure DMA 'black-box' crossing platform in Asia and has grown steadily versus the Tokyo Stock Exchange's total daily turnover. Three daily point-in-time matches for Japan-listed equities include a pre-open VWAP cross plus matches at closing price of morning and afternoon sessions of primary exchange.

Active: 2001

Members: Not disclosed

Users: Access available through Instinet or a range of third-party brokers and EMS providers.

Instruments Traded: Equities

Philosophy: Designed to give clients the capacity to trade blocks with each other to find their natural counterparty and reduce market impact.

Management: Glenn Lesko, CEO of

Instinet in Asia
Phone: +81 3 6366 8400
Email: joji.watanabe@instinet.com

Web: www.instinet.com

Instinet KoreaCross

Category: Point-in-Time Crossing Network
Owners: Instinet (Samsung Securities local
broker sponsor)

Target Audience: Institutional Investors in South Korea

Business Model: KoreaCross is a neutral platform that enables institutional investors to trade Korean equities anonymously presettlement, and without market impact. KoreaCross operates a daily pre-market VWAP match at 8:40 a.m. KST for the day's primary market volume-weighted average price

Main Features: The Korean market's first independent securities crossing network, and the only crossing platform in Korea. Orders are completely anonymous until post-market reporting on the K-BloX system. It allows for short sales, and will aggregate order flow to allow clients to more easily meet the Korean market's 100 million KRW minimum order-size requirement.

Active: June 2008

Members: Not disclosed **Users:** Access available through Instinet or a range of third-party brokers and EMS

providers.

Instruments Traded: Equities

Philosophy: Designed to give clients the

capacity to trade blocks with each other to find their natural counterparty and reduce market impact.

Management: Glenn Lesko, CEO of

Instinet in Asia

Phone: +852 (0)2585 0500 Email: kym.graham@instinet.com

Web: www.instinet.com

KABU.com PTS

Category: Proprietary Trading System

(PTS)

Owners: KABU.com

Target Audience: Japanese equity

markets

Business Model: Kabu.com Securities Co. is an online securities company that offers a wide range of services to retail clients as well as two off-exchange platforms that facilitate Japanese equity trading for institutional clients. KABU.com is unique among the Japanese PTSs in that it is the only platform in Japan to offer an auction trading system similar to that of the exchanges

Main Features: The first Japanese online broker that provides a sophisticated order execution service for private investors (except for electronic trades for institutional investors). This 'Automatic Best Execution Order' is one of the methods of automatic orders which compares the prices of primary exchanges with those of KABU. com PTS and sends orders to the market that offers the best price automatically. Furthermore, this service continues to monitor both markets not only at the time of order but also after the order. If the market it didn't select offers the better price, it changes the order from another market into this market. This service can change the markets without limit and respond to the market fluctuation flexibly. Active: July 2006

Members: Institutional Investors Users: Buy and Sell side

Instruments Traded: Cash Equities Philosophy: As the Japanese equity trading landscape is quickly changing to accommodate a diverse group of execution venues, kabu.com is keen to attract liquidity from both on and offshore institutions. KABU.com PTS aims to be a complementary alternative venue for stock exchanges, using the same auction method as the Tokyo Stock Exchange, offering a

smaller tick range and automatic best execution order for private investors. Management: Yoichi Ishikawa, Executive

Tel: +81 3 3551-511 1 Email: Not disclosed Web: www.kabu.com

Liquidnet Asia

Category: Block trading platform.

Owners: Liquidnet.

Target Audience: Global buy side. Business Model: Liquidnet is an electronic marketplace built exclusively for its buy-side-only Member community, facilitating efficient equities trading for asset management firms worldwide. Liquidnet brings together institutional investors to execute large block-sized orders directly and anonymously - with improved prices and minimised market impact.

Main Features: Liquidnet Australia has an average execution size of A\$1.27 million, with the largest single execution being A\$16.6 million, 97% of all trades were in the bid/ask spread, while 68% were at the mid-price.

Active: November 2002: Hong Kong. Singapore, and Korea: November 2007; Australia: February 2008; Japan: June 2008: New Zealand: June 2010. Liquidnet now offers trading access to 36 equities markets around the world.

Members: Community includes 598 of the top large buy-side institutions. There are 168 Member firms in Liquidnet Asia Pacific, providing the platform with nearly US\$6.7 billion in average daily liquidity (as of Q1 2010).

Users: Active Members.

Instruments Traded: Block equities.

Philosophy: Provide buy-side traders with the ability to efficiently and anonymously trade large blocks of equities. Members maintain complete control of their orders in our secure buy-side-only pool of liquidity, whilst minimising market impact and maximising price improvement.

Management: Lee Porter, Head of Liquidnet Asia Pacific

Tel: Hong Kong: +852 3798 6888;

Singapore: +65 6550 9614; Australia: +61 2 9227 7000; Japan: +81 (0)3 5366 3200.

Email: asiasales@liquidnet.com Web: www.liquidnet.com

Liquidnet Australia

Category: Block trading platform. **Owners:** Liquidnet.

Target Audience: Global buy side. Business Model: Liquidnet is an electronic marketplace built exclusively for its buy-side-only Member community, facilitating efficient equities trading for asset management firms worldwide. Liquidnet brings together institutional investors to execute large block-sized orders directly and anonymously – with improved prices and minimised market impact.

Main Features: Liquidnet Australia has an average execution size of A\$1.27 million, with the largest single execution being A\$16.6 million. 97% of all trades were in the bid/ask spread, while 68% were at the mid-price.

Active: Australia: February 2008; New Zealand: June 2010. Liquidnet now offers trading access to 36 equities markets around the world.

Members: Community includes 598 of the top large buy-side institutions. Liquidnet has 168 Member firms providing us with nearly A\$1.7 billion in average daily Australian equity liquidity (as of Q1 2010). Users: Active Members.

Instruments Traded: Block equities. **Philosophy:** Provide buy-side traders with the ability to efficiently and anonymously trade large blocks of equities. Our Members maintain complete control of their orders in our secure buy-side-only pool of liquidity, while minimising market impact and maximising price improvement.

Management: Sam Macqueen and Stephen Zilioli, Co-Heads of Liquidnet Australia Pty Ltd

Tel: +(61) 2 9227 7000 Email: asiasales@liquidnet.com Web: www.liquidnet.com

MLXN

Category: Internal Crossing Network Owners: Bank of America Merrill Lynch Business Model: The Bank of America Merrill Lynch internal crossing network (MLXN) is designed to leverage the vast pool of liquidity available within the firm, from retail orders to large institutional block orders and offers clients access to substantial global liquidity.

Main Features: Low alpha crossing

opportunities minimize adverse selection. Sophisticated anti-gaming logic to protect clients' orders. Anonymous, fully electronic continuous crossing at parent and child order level. Maximised crossing opportunities with centralised flows across internal and external clients.

Active: Not disclosed
Members: Not disclosed

Users: MLXN is a feature of the firm's global algorithmic and Smart Order Routing offering. It is used as a feature of the electronic trading suite by institutional clients such as hedge funds, mutual funds, broker-dealers and Bank of America Merrill Lynch's trading desks.

Instruments Traded: Equities

Management: Mark Wheatley, Managing Director

Tel: Japan: +813 6225 8398; PacRim: +852 2161 7550

Email: ElectronicTradingSales@baml.com **Web:** Not disclosed

MS Pool

Category: Broker Crossing System

Owners: Morgan Stanley

Target Audience: Internal and external clients

Business Model: MS Pool combines external orders from Morgan Stanley's retail, institutional and broker-dealer clients, as well as algorithmic flow and orders from the firm's internal trading desks. The latter include the cash, program and proprietary desks. Customers are able to opt out of trading against flow from these internal desks in MS Pool.

Main Features: MS Pool seeks to reduce market impact and overall transaction costs by executing quickly and efficiently at or within the published best Bid and Offer. MS Pool is one of a number of points of liquidity utilised by Morgan Stanley's dark liquidity router – Nightvision – and its various stealth trading strategies, in executing trading flow. Nightvision and Morgan Stanley's suite of trading strategies allow customers to set a minimum execution quantity to ensure larger execution sizes with zero to negligible latency added to the execution of orders.

Active: September 2006
Members: Not disclosed

Users: Institutional asset managers, hedge funds and retail

Instruments Traded: Equities Philosophy: Morgan Stanley's order handling practices ensure the full protection of client orders pre-, intra- and post-trade. Further, the firm provides its clients with complete transparency on how their orders are routed and where their trades are executed.

Management: Joe Sarcona

Tel: Hong Kong +852 2848 8222 or 1-800-231-2252 (from US)

Japan +813 5424 5709 or 1-800-932-8919 (from US)

Email: mset-fe@morganstanley.com

Web: www.morganstanley.com

Nomura NX

Category: Internal Crossing Network Owners: Nomura

Target Audience: Institutional and hedge fund clients

Business Model: NX provides Nomura's global electronic client base with anonymous access to its available dark liquidity. NX as a venue encourages block liquidity through the use of advanced antigaming controls and flexible controls for clients. Liquidity is contributed through client flow and complimented by flow from internal cash, program, delta one and derivatives desks. This structure provides clients with a broad range of crossing opportunities in terms of both trading universe and investment themes. Nomura does not operate systematic internalisers or market making strategies within the pool; in addition, there is no high frequency trading within NX, and Nomura maintain the ability to regulate what flow types clients cross against.

Main Features: Multiple crossing levels - Nomura offers crossing on a traditional dark pool mid-point basis, in addition to child-order 'touch and go' via its smart order router or through direct use of IOC orders. In addition, NX is the first pool to offer to provide clients with a greater opportunity to cross against orders working on overlapping time horizons. This provides a significant uptick in crossing rates, and orders are filled on a realised VWAP basis for the duration matched.

Advanced anti-gaming logic - NX incorporates sophisticated logic which protects clients against adverse behaviour. This includes the use of a random timed mid-price crossing cycle in the dark order book to ensure clients are protected against any opportunistic "pinging", in addition to "well formed market checks" to regulate participant behaviour.

Client configurable - Clients can determine the nature of their executions with the ability to specify their initial and subsequent fill sizes as well any residual quantities they would be willing to accept. Active: Japan: September 2009; Hong

Kong: May 2010 Members: Not disclosed **Users:** Nomura clients

Instruments Traded: Japanese and Hong

Kong equities

Philosophy: Nomura believe aggregation of dark liquidity remains a key interest to clients, but should not be provided at the expense of increased information leakage. Nomura will continue to explore third-party aggregation options as they become viable. but maintain strict controls around how client orders will interact with available options.

Management: Robert Laible, Head of Electronic Trading Service & Program Trading Sales, Asia Pacific

Tel: +852 2252-6700 Email: AsiaEtsAll@nomura.com Web: www.nomura.com/nx

POSIT

Category: ECN

Owners: Investment Technology Group

Target Audience: Global Equity markets **Business Model: ITG's POSIT crossing** destinations give buyers and sellers opportunities to match equity orders with complete confidentiality, access to diverse liquidity pools, no market impact and the cost savings of midpoint pricing.

Main Features: POSIT and POSIT Marketplace are indispensable tools for traders in Asia seeking to access multiple sources of liquidity from a single destination. By bringing together institutional liquidity, the POSIT products can help deliver higher fill rates, lower trading costs and easier workflow for traders.

Active: 2002

Members: Buy and Sell Side

Instruments Traded: Equities Philosophy: Designed to enable institutions to trade anonymously in block size and thus prevent adverse market impact.

Management: David Stevens, Chief Executive Officer of ITG in the Asia Pacific

Tel: +852 2846 3567 Email: info@itg.com Web: www.itg.com

SBI Japannext

Category: Proprietary Trading System

Owners: SBI Holdings, Inc. 35.7%; Goldman Sachs Group, Inc. 35.7%; SBI Securities Co., Ltd. 10.0%

Target Audience: Japanese Equity Markets

Business Model: Established in November

2006 as the first full-scale Proprietary Trading System (PTS), SBI Japannext allows the trading of Japanese equities for institutional liquidity provided from leading broker houses in Japan. The venue deploys a state-of-the-art trading system used by leading worldwide exchanges such as NYSE Euronext and started its nighttime session in October 2007. Trading was expanded to cover the daytime session in October 2008. Main Features: The daily trading value of 'Japannext PTS' reaches 15.6 billion ven from time to time, and it has been recognised as one of the leading execution venues in Japan. According to research conducted last year, Japannext PTS showed the same or improved prices compared to the main exchange for more than 40% of the total trading hours. In addition, the venue blotter had around 5% of the order quantity for the best quotes available on the main exchange.

Active: August 2007

Members: SBI Securities, Rakuten Securities, Click Securities, Goldman Sachs Securities. Credit Suisse Securities. Morgan Stanley MUFG Securities, Merrill Lynch Japan Securities, UBS Securities, Instinct Securities, BNP Paribas Securities, **Deutsche Securities**

Users: Not disclosed Instruments Traded: Equities Philosophy: Aims to enhance the convenience of investors in the stock market and create Japan's first full-fledged PTS (Proprietary Trading System) market to which many securities firms are connected online.

Management: Mitsunori Fukushi, Representative Director & CEO

Tel: Not disclosed

Email: ptsbiz@japannext.co.jp Web: www.japannext.co.jp

SIGMA X

Category: Internal Crossing Network

Owners: Goldman Sachs

Target Audience: Institutional traders

globally

Business Model: Through SIGMA X, Goldman Sachs aims to connect clients to the largest source of non-displayed liquidity available. Our liquidity strategy matches customer-to-customer flow, as well as Goldman Sachs franchise liquidity. SIGMA X offers both continuous and point-in-time matching (X-Cross). Goldman Sachs' global crossing network offering consists of SIGMA X (US), SIGMA (Europe) and SIGMA X (Asia). Main Features: SIGMA X Block Signals

provides users the ability to intelligently communicate and locate block crossing opportunities. Users, posting blocks to SIGMA X, can use Signals to invite potential block contras, to meet them in the pool. These Block Signals represent a 'FIRM' opportunity to cross and reveal only side and minimum block quantity for that symbol.

Active: SIGMA X was launched in 2006. Members: Includes Broker/Dealers, Institutions and Hedge Funds

Users: Buy and Sell side Instruments Traded: Equities

Philosophy: SIGMA X was created as a means of harnessing the liquidity of both Goldman Sachs Electronic Trading (GSET), as well as the greater Goldman Sachs trading franchise, in an un-displayed liquidity center. Through SIGMA X, GSET aims to provide its customers with both a very sizable and unique pool of liquidity, easily accessible by the firm's trading tools.

Management: Greg Tusar, Head of Goldman Sachs Electronic Trading Tel: Tokyo - +81 3-6437-7399 Hong Kong

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UBS PIN

Category: Internal Crossing Network
Owners: UBS

Target Audience: Institutional investors and Hedge Funds

Business Model: UBS PIN is UBS's internal order flow network—a signal-free environment in which users can interact with quality liquidity from institutional and retail agency orders. The bank designed this internal network to be as natural as possible and 100% non-displayed, so there's no market impact.

Main Features: UBS PIN provides access to a natural-only, 100% dark pool, which operates continuous crossing on a strict price/time priority basis and is currently available in the APAC region in Japan, Hong Kong and Australia, in addition to offerings in Europe and the US. PIN in APAC offers two types of crossing: queue improvement and mid-tick crossing, enabling clients to maximize trading opportunities by anonymously matching orders with our internal non-displayed flow.

Active: UBS began offering crossing in Japan in 2006, and launched UBS PIN in Japan, Hong Kong and Australia in May 2009.

Members: N/A

Users: UBS PIN in APAC is available to Direct Execution institutional clients. Instruments Traded: Japan, Hong Kong and Australian Equities

Philosophy: UBS believes that crossing is about the client: its goal is to deliver quality execution and a consistent experience, not preference its own liquidity and increase its advertised crossing rate. UBS carefully considers its liquidity partners to ensure only the highest quality execution. Because UBS believes that dark liquidity should be dark, it does not use IOIs and only participates in venues where it is confident in that information leakage risk is fully managed. UBS provides complete transparency in the post-trade process, so clients know how, where and when their orders were executed.

Management: Yang Xia, Head of UBS Direct Execution - APAC

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