TRENDS IN SURVEILLANCE

SMARTS Surveillance Conference Review
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INTRO

Hosted at the NASDAQ OMX MarketSite in Times Square this past September, the 7th and best-attended edition of the SMARTS Surveillance Conference proved to be a hotbed for sharing best practices across the surveillance community. Attended by over 110 delegates, from over 50 organizations in 22 countries, the event was truly a unique opportunity to observe broker-dealers networking with exchanges and regulators while investigating common challenges affecting our industry.

In the time leading up to the conference, and even in the months since, we have seen unprecedented change in the global securities landscape. From MiFID, to IOSCO and ESMA mandates, to the Market Access Rule and Dodd-Frank in the U.S., there are a few common themes brought into existence as a result of the Global Financial Crisis, continual regulatory evolution, and the mission to create fair, efficient global markets in the face of intense global competition. Throughout the conference program, our distinguished speakers offered invaluable insight, providing perspectives from exchanges, regulators and market participants on these market structure challenges. Among them: the growing need for cross-market surveillance, international consolidation, the surveillance implications of increased investment in various derivatives markets, and the implications of new market paradigms, including HFT, dark pools and sponsored access.

We’ve summarized each presentation in this special report in the hope of extending the participants’ expert knowledge and vast experience to the global SMARTS Surveillance Community.

We hope you enjoy the booklet.

Kind regards,

Graham Jordi
Head of SMARTS
Vice President, NASDAQ OMX

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Financial markets are fragmented among exchanges and other trading venues. Each attracts an array of participants — from sophisticated high frequency and algorithmic traders to block traders and small retail investors — all of whom seek opportunities in multiple assets and geographies. In this environment, surveillance systems, policies and procedures have to be flexible and innovative. Failure to do so may affect market integrity and investor confidence. Exchanges, broker-dealers and regulators alike are being put to the test.

Panelists shared their perspectives with the SMARTS Conference audience.

As moderator, Miranda Mizen, Principal and Director of Equities Research at TABB Group, prefaced the discussion with three observations based on her research:

1) there is a correlation between integrity and confidence, and once confidence dips, following an event such as the Flash Crash, it takes time for it to recover;
2) market surveillance in the age of electronic trading is much different from a decade ago; and
3) cross-border exchange mergers are being driven by the need for global reach, sharing IT platforms and asset class diversification.
Edward Knight, General Counsel & Chief Regulatory Officer at NASDAQ OMX, noted that fragmentation is a product of competition, and competition has benefitted both exchanges and investors. Although fragmentation poses challenges, surveillance is not insurmountable; several marketplaces in the Nordic region are being monitored using SMARTS technology out of one location.

From the broker-dealer perspective, getting the right data in the right format is much more important in 2011 than it was in 2009. With the proliferation of cross-border trading, surveillance professionals need to question their peers so they understand the business rationale behind each trade. From the regulators’ perspective, fragmentation has opened gaps in coverage. Many are calling for more granularity, specificity and consistency in identifying market participants and understanding their activities.

“We are seeing activity by some more nefarious traders who are consciously trying to do things in one market to impact another market,” warned Tom Gira, Executive Vice President, Market Regulation Department at FINRA. “It’s critically important that we as regulators and market participants embrace efforts to monitor this new world.”

To this end, exchanges and market participants need to dedicate an appropriate amount of technology and human resources to their surveillance unit and develop good policies and procedures to support their efforts. While real-time surveillance is essential for some functions, especially on high trading volume days, industry experts question whether real-time is always needed. A T+1 delay may be necessary, for example, when data is coming from multiple marketplaces and broker-dealers.

The panelists agreed that a consolidated audit trail (CAT) would yield enormous benefits. Each marketplace has a unique view of events, so different patterns may indicate manipulation on each.

“Exchanges and SROs need to innovate together,” said Tami Schademann, Senior Vice President, Chief Regulatory Officer at BATS. “We must share our alerts and all of our surveillance methodology and not view this information as intellectual property.”

At the same time, there must be a balance between protecting the markets and making it prohibitively expensive to do business. Trading and technology costs have declined, but compliance costs have not. As the markets have become more automated, so has compliance, and the period required to become compliant has been shortened. Broker-dealers are achieving efficiencies by using platforms such as SMARTS to share reports across multiple business lines. Moreover, some exchanges are hard coding compliance into their systems — short sales being one example.

Since the Flash Crash, observers have questioned whether HFT impacts the ability of regulators and broker-dealers to see what is going on, therefore eroding investor confidence. While HFT adds liquidity and is an important market component, combining speed with information advantage can be dangerous. Gira recommends that firms test their algorithms before introducing them and then carefully monitor how they are used.

“A legitimate strategy at launch could potentially turn bad if tweaked by a rogue trader unbeknownst to the firm,” he said.

But he does not believe traders should be required to register their algorithms with regulators. Algos are confidential intellectual property. For the most part, regulators can do their work without them.

The session provided a good understanding of the 21st century surveillance challenges faced by regulators, exchanges and broker-dealers. Clearly broker-dealers and exchanges require flexible surveillance systems, so they can constantly innovate and keep up with rapid change. The CAT would be extremely useful in identifying market participants and the orders they send to marketplaces. Broker-dealers need to define who is responsible for surveillance reporting and when an alert needs to be escalated. Meanwhile, regulators have to work with the exchanges and broker-dealers to close the gaps caused by fragmentation.
SMATER, NOT MORE REGULATION

PRESENTER:
Maureen Jensen
Executive Director and Chief Administrative Officer, Ontario Securities Commission

- Regulators need to understand trends and patterns, the activities of market participants and the products being manufactured, purchased and sold.
- Regulators have to re-think all their existing processes and procedures and collaborate with an array of stakeholders.
- The Canadian Securities Administrators (CSA) has a close working relationship with the Investment Industry Regulatory Organization of Canada (IIROC) to collect and consolidate all equity data for market surveillance.

The financial services industry is going through a revolution, and regulators have to re-think all their existing processes and procedures. Nowadays, they have to track who is doing what in the markets and when. Regulators need to understand the trends and patterns, the behaviour of clients and firms, and how new products are being manufactured, purchased and sold. This level of market surveillance cannot be achieved without systems, data analysis, knowledge and research.

According to Maureen Jensen, Executive Director and Chief Administrative Officer at the Ontario Securities Commission (OSC), regulators need a broad focus and a mandate to address the gaps in regulation. IOSCO, the central banks and G20 are committed to doing more than in the past. Regulators must collaborate among themselves and work with businesses to provide a system-wide approach to financial regulation and systemic risk.

In Canada, regulation is split along prudential lines, and systemic risks can potentially fall through the cracks. Ideally, the gaps should be filled by introducing smarter, not more, regulation. Thirteen securities commissions...
from across the country participate in the Canadian Securities Administrators (CSA). These entities consult each other and negotiate to ensure consistent policies and regulations across the country. They coordinate with the Superintendent for Financial Institutions, who oversees the banks, as well as the Bank of Canada.

Maureen Jensen

One challenge is the limited access to trade data, especially in OTC derivatives. As in other countries, trade repositories will be developed in Canada. In addition, the Investment Industry Regulatory Organization of Canada (IIROC) provides the CSA with surveillance and market data, which allows CSA members to identify market issues that they need to consider in policy making, compliance activities and enforcement actions.

IIROC uses a custom version of the SMARTS Integrity Platform, maintaining a single surveillance system-across 11 markets in Canada. There is one set of market integrity rules with which all equity markets comply. IIROC launched its new system the day before the Flash Crash, and it passed the ultimate stress test with flying colors.

An important feature of IIROC’s system is the consolidated audit trail. Each order submitted to the exchange carries a series of regulatory flags to ensure transparency. They are marked with the brokers’, traders’ and direct market access IDs. They denote whether the transaction is long or short, and they include insider and significant shareholder markers. In addition, the orders show the time of entry and transaction. Discussions are underway to consider adding specific client IDs as well. Communication is standardized using a regulatory FIX Protocol, which facilitates data integration. This consolidated audit trail is augmented by additional information that firms are required to maintain and submit to the regulator upon request.

“But data for data’s sake is just a huge information dump, and if you don’t know how to look at it and have the tools to process it, the data doesn’t get you anywhere,” Jensen pointed out. “SMARTS technology is a very good example of a tool that can help regulators understand and oversee the markets. We need to begin to centralize our information, and we need to be able to use systems to help us analyze this data.”

In her concluding remarks, Jensen stressed that securities regulators have the best opportunity in years to make bold moves. But she warned against succumbing to political pressure and allowing knee-jerk reactions in policy-making, which can have negative unintended consequences. Regulators need to understand the activities and the needs of clients, stakeholders, and market participants, consult with others, employ experts, conduct research, and challenge accepted practices. They should embrace analysis and ensure that they use evidence-based decision-making to formulate policies.

“If we do this well, we will definitely deliver smarter regulation for our capital markets — regulation that protects investors, encourages marketplace innovation, allows for efficient markets and makes Canada a much better place to work,” she said.
When MiFID came into effect a few years ago, Deutsche Bank fundamentally changed its trading operations. Andy Harris, Head of Compliance Monitoring EMEA, explained the impact of the regulations on trade surveillance and monitoring.

Deutsche Bank expected the number of trading venues to increase once MiFID came into effect. As a result, the surveillance team knew they would have to take in more market and reference data, even if their trade volume stayed the same. They also knew each trading venue would have to be monitored on a separate screen and it would be time-consuming to identify patterns among the various screens.

"The number of alerts multiplied massively. We had about five or six times the volume of alerts for the same trading venues, which was odd," said Harris. "We were seeing a massive amount of false positive alerts, and a huge number of alerts on secondary venues when there was virtually no liquidity in a stock."

In short, the surveillance team was putting in the same amount of effort and getting many more alerts. Yet the coverage of trading had decreased from about 70% to 50% because only the traditional exchanges were being monitored. SMARTS had the functionality to overlay spreads from different marketplaces, but this was insufficient given the new complex market structure in Europe. Clearly the bank’s cross-market capabilities had to be reinforced.

"Creating links between every venue on which a share could be traded was not going to work for us," said Harris. "We would have had to multiply the number of screens that we monitor exponentially. It would be a massive exercise."

Deutsche Bank determined that a holistic approach was needed, and it decided to shift its focus from activity on trading venues to activity in specific shares.
“Now we think about our activity in the whole of the marketplace and only monitor one set of screens. It works fantastically,” he told the audience. 

Fortunately, Deutsche Bank did not have to change its data model. Initially, it maintained the existing market coverage by combining some direct market feeds and internal data with overlays. Since then, extra venues have been added to restore coverage of 65-70% of the bank’s European trading.

Some tradeoffs had to be made. With the venue-by-venue model, the surveillance team could view all the trading on the venue and benefit from many alert types. With cross-market monitoring, there are fewer alert types, but those they get are focused on a specific type of activity. As a result, the bank has prioritized about 20 risks.

“Effectively we traded off increased coverage and efficiency for narrower alert types,” said Harris. “But for us, it was a good tradeoff, and we can always increase the alert types going forward.”

Having made these changes, Deutsche Bank’s surveillance is more efficient. Coverage has been increased and headcount has decreased. More important, the bank is confident it can comply with current regulations and reporting requirements.

THE IMPACT OF INTERNATIONAL CROSS-MARKET REGULATION – LIFE AFTER MIFID

PRESENTER:
Professor Peter Gomber
Chair of Business Administration, Co-Chair E-Finance Lab at Goethe, University of Frankfurt

> MiFID’s goals are to foster competition and increase integrity, transparency and market liquidity.
> The directive increased liquidity in terms of spread and total depth of order book.
> Structural differences between OTC and primary market trading are overestimated in the public discussion.

Introduced in November 2007, MiFID established a new regulatory framework governing the organized execution of investor transactions by exchanges, other trading systems and investment firms. MiFID is under review, and industry experts are looking at whether the directive achieved its goals of fostering competition and increasing integrity, transparency and market liquidity. Professor Peter Gomber, Chair of Business Administration and Co-chair of the E-Finance Lab at Goethe, University of Frankfurt, presented the results of two studies showing the impact of MiFID on market quality.

Gomber and his co-authors looked at data from the 60-day period before MiFID went live and the 60-day period before the first rumors about the debt crisis in Europe started. They divided the European markets into a “treatment” group comprised of the highly fragmented markets such as Germany, the U.K., France and Italy and a control, or “non-treatment,” group comprised of just Spain. MiFID was implemented in Spain, but MTFs could not provide a competitive service there due to the country’s complex, expensive settlement and share registration process.

The authors conducted a matched pair analysis between the IBEX 35, an index of the most liquid Spanish stocks, and the Euro Stoxx Index. They took the constituents of the Euro Stoxx Index that closely matched the Spanish stocks in terms of free float market capitalization. After the data was cleansed, 24 pairs of Spanish and non-Spanish securities remained, and these were classified into groups of six stocks. They analyzed the supply of liquidity and used Thomson Reuters order book tick history to take snapshots for every minute during the 60 days before and after MiFID.

The authors reconstructed a virtual European order book by integrating all the order books. That way, they could assess the effect on the total liquidity in the European markets pre- and post-MiFID.

They looked at the effect of MiFID on liquidity, measured in terms of spreads and exchange liquidity measure (XLM). As measured by the spread when looking at the consolidated order books of the treatment group, liquidity improved by 25%. The authors then used the XLM as a benchmark. This method involved measuring the total depth of the order book in terms of roundtrip transaction costs by simultaneously sending in a buy and a sell order in a specific size. Using the XLM measure for €50,000 and €100,000 transactions, liquidity
improved by 31% and 43% respectively. Regression analysis determined the statistical significance of the introduction of MiFID, which was found to be significant at the 99% level. The study confirmed that MiFID has increased market liquidity.

Recital 53 of MiFID defines the characteristics of OTC transactions. They are ad-hoc and irregular and carried out with wholesale counterparties. They are part of a business relationship that is characterized by dealings above standard market size, which is defined per security in the MiFID database maintained by ESMA. In addition, the deals are done outside the systems that firms use for systematic internalization.

The authors looked at OTC trading to determine how the reality matched with the text and spirit of the directive. They analyzed publicly available data from liquid Euro Stoxx 50 securities and some less liquid securities. They also analyzed all the OTC venues in Europe. The study covered more than 98% of all trade reports for the Euro Stoxx 50 constituents over a period from January 1, 2008 to April 30, 2010.

“We have more or less all the OTC trades available in our data set,” he told the audience. “These total 300 million trades representing €14 trillion in trading volume and more than 30 gigabytes of compressed data.”

OTC trades were categorized by size thresholds. MiFID defines a retail size as €7,500 and a standard market size (based on the average value of transactions) as €7,500 to €35,000. A €50,000 to €500,000 trade is considered large in scale and given a pre-trade transparency waiver.

Market participants mainly trade OTC to prevent market impact, so Gomber and his colleagues operationalized this activity by inventing a (potential) new regulatory construct called Average No Market Impact Size (ANOMIS). If an order is smaller than or equal to the volume available on the best bid or offer, it would not result in market impact.

The analysis revealed that nearly half of the OTC trades in highly liquid securities and almost 60% of those in less liquid securities were below standard market size. ANOMIS analysis showed that for highly liquid securities, more than 70% of OTC trades would face no market impact if they were executed on the transparent public reference market. For less liquid securities, it is 60%.

Gomber concluded the presentation by noting that structural differences between OTC and primary market trading are overestimated in the public discussion.

“Competition and fragmentation not only leads to a new level of liquidity from the consolidated perspective, but also has a positive effect on the home market,” says Gomber. “In a competitive market, traders have to quote more aggressively.”

Interestingly, in the control group there was an increase in transaction costs both in terms of spreads and the total roundtrip transaction costs.

Next, Gomber and his co-authors tried to determine whether MiFID improved transparency. MiFID imposes specific pre- and post-trade transparency requirements on regulated markets and MTFs. Moreover, systematic internalizers must provide pre-trade transparency. For OTC trading, which comprises about 40% of all European trading, there is no pre-trade transparency requirement. However, there is an obligation to provide post-trade information anonymously.

In a competitive market, traders have to quote more aggressively.
In August 2010, responsibility for supervising real-time trading on Australia’s domestic licensed markets passed from the Australian Securities Exchange (ASX) to the regulator, the Australian Securities and Investments Commission (ASIC). Australia also opened its doors to competition, so nowadays dark pools, high frequency trading and market surveillance are prominent on ASIC’s radar screen. Greg Yanco, Regional Commissioner NSW and Senior Executive, Market and Participant Supervision at ASIC, explained the implications for people, processes and technology.

When SMARTS signals a potential case of manipulation, or a market participant raises a red flag, an ASIC market surveillance analyst contacts the broker to identify the client and obtain relevant records. The analysts work closely with the investigations unit’s deterrence team. The decision whether to investigate a matter is taken by a triage group consisting of senior managers from surveillance and investigations. Once a matter is under investigation, surveillance analysts continue to provide support. The participant compliance and participant relationship teams have doubled in size, reflecting their key role in upholding market integrity. The integration of market supervision with ASIC’s existing markets team has brought some significant efficiency gains.

“It used to take about 90 days from the time of trading until the investigation process decision,” said Yanco. “Now it’s about 47 days.”

Chi-X Australia, the first competitor to ASX, is starting operations with trading in about 200 stocks. Around the same time the government gave Chi-X approval to operate in Australia, ASX pledged to introduce a new trading system and change its pricing model to give back about A$23 million in fees to participants. It also announced plans to launch PureMatch, a new marketplace for high frequency traders.

In response, ASIC proposed some key equity market structure reforms in Consultation Paper 145, released in November 2010 and Consultation Paper 168 released in October 2011. The reforms touch on several areas including: market operator cooperation, dark pool reporting, volatility controls, implementing and testing algorithms, market making, short selling and client IDs. New rules are being rolled out in phases through 2011 and 2012.

Market cooperation and data sharing rules came into effect in May 2011 in preparation for competition. ASIC and Chi-X must coordinate regulatory halts on ASX and Chi-X, and cross-market surveillance processes and technology were put in place. Moreover, market participants have to report on their dark pool trading monthly.

“We are concerned that there’s a tipping point where too much business in a dark pool will impact the central limit order book,” said Yanco. “We tried before to suggest that dark pools should be limited to orders of about A$20,000. We’ll probably go with something higher than that but only for resting orders in the order book.”
Anomalous order controls will prohibit an order from being executed that is around 10% away (depending on the market) from recent trading activity. There are new requirements pertaining to access to consolidated data and a pre-trade transparency rule based on ASX’s current priority crossing rule. Common tick sizes, broker IDs and stock codes are required across all markets, and a proposal to attach client IDs to orders is under consideration. ASIC is reinstating a requirement to tag trades as short sales and is introducing a suspicious transaction reporting rule. Further, ASIC is consulting with market participants regarding the testing of algorithms prior to implementation.

“We will be quite strict on best execution when it comes in,” said Yanco. “There won’t be much tolerance at all around that.”

All these changes are expensive. Prior to the introduction of competition in Australia, ASIC charged ASX a flat fee for supervision services, but from January 1, 2012 the new cost recovery model will shift 85% of the burden to market participants. Fees will be based on trades, and for IT costs and messaging volume; those who trade the most will be charged the most.

“The next part of the process is building those databases and getting our surveillance capabilities around post-trade up to scratch,” Yanco concluded. “We’ve been fairly active, and we’ve got a fair bit of work to go.”

ASIC has expressed little tolerance for non-compliance of best execution rules.
GLOBAL PERSPECTIVES ON CROSS-MARKET SURVEILLANCE

PRESENTERS:
Avneesh Pandey
General Manager, Securities & Exchange Board of India (SEBI)

Her Excellency Maryam Buti Al Suwaldi
Deputy CEO for Licensing, Supervision & Enforcement, Securities & Commodities Authority, UAE

Wayne Groom
Client Services Manager, Canada, SMARTS Broker, NASDAQ OMX

Michael O’Brien
Global Head of Sales, SMARTS Broker, NASDAQ OMX

➢ Regulators, exchanges and brokers need to conduct cross-asset surveillance to detect manipulation in underlying assets that could affect the trading outcome of related derivatives.

➢ The Securities and Exchange Board of India improved cross-market surveillance by establishing a client identification process, revising the price bands and circuit filters and upgrading its SMARTS Integrity system.

➢ Surveillance is more effective and cost efficient when a global view of multiple marketplaces is maintained, but understanding different marketplaces, back office operations, technologies and regulatory regimes can be a challenge.

➢ The United Arab Emirates integrated market surveillance technology across the regulator and both stock exchanges, so that all three receive the same alerts from SMARTS.
Surveillance becomes a greater challenge when transactions need to be monitored across different exchanges and trading venues. It can be even more daunting when monitoring across an array of asset classes. Speakers from the Securities and Exchange Board of India (SEBI), the Securities & Commodities Authority (SCA) of United Arab Emirates and SMARTS explained how they tackle the complexity.

INDIA

Avneesh Pandey, General Manager at SEBI, explained that India has two major exchanges: the National Stock Exchange (NSE), and the Bombay Stock Exchange (BSE). The NSE is the dominant player, commanding a 75% market share. Companies can list on either exchange and can also cross-list. There are around 9,000 brokers who can belong to either or both exchanges. Moreover, multiple products are traded on India’s exchanges including equities, derivatives and currencies.

Although the exchanges are responsible for front-line surveillance, SEBI’s Integrated Market Surveillance System (IMSS) collects the trade and order data end-of-day from the exchanges and off-market or post-trade data from its two depositories. It also maintains constant dialog with the market participants, stock exchanges and depositories through the Inter-Market Surveillance Group, which meets weekly to discuss market operations and build strategies to tackle problems as they arise.

As it is elsewhere, identifying clients can be difficult. Broker-client combinations define how clients trade, but those that trade through multiple brokers have multiple numbers. SEBI uses the Permanent Account Number (PAN), which is issued by the income tax authorities in India, to identify individuals and link their activities.

Price bands and circuit filters were in place even under the old open outcry system, but they have been revised to reflect best practices. SEBI introduced cross-market alerts based on the cash and derivatives segments as well as meta market alerts. In addition, SEBI has built a rumor verification system to help maintain an orderly market.

“Whenever there are market rumors going through various news channels, people get in touch with SEBI, or we get in touch with the market to provide clarification,” said Pandey.

SEBI bought several SMARTS Integrity modules in 2005 and implemented them in 2007. Since then, daily transaction volumes (orders and trades) have grown from about 20-25 million to about 350 million. Currently, SEBI is working on about 19 scenarios, and its goal is to reduce the number of alerts that require investigation to less than 100 per day. The system is being upgraded to SMARTS 6.3, and going forward, SEBI hopes to collaborate with SMARTS to develop a rolling benchmark.

Pandey presented a case study of a promoter company that manipulated the market by transferring shares to a few levels of entities. Alerts were generated on ALMAS, the workflow for processing alerts generated by the alerting engine. This triggered an investigation which showed synchronous trades and broker concentrations at both exchanges and large trades at the BSE.

“Client profiling played a key role in finding the Level 1 and Level 2 sets of people who were involved in that market manipulation,” said Pandey.

Various SMARTS Integrity modules were used to conduct the analysis which allowed SEBI to obtain a tick-by-tick understanding of what went wrong.

UNITED ARAB EMIRATES

Her Excellency Maryam Buti Al Suwaidi, Deputy CEO for Licensing, Supervision & Enforcement at Securities & Commodities Authority (SCA), explained how her organization leverages SMARTS Integrity to improve surveillance.
The United Arab Emirates has two securities markets: the Abu Dhabi Securities Exchange (ADX) and the Dubai Financial Market (DFM). Both are powered by NASDAQ OMX trading technology, which is compatible with SMARTS Integrity. Trading data flows seamlessly in real-time from the exchanges’ trading platforms to SMARTS Integrity and then back to SCA as well as to both marketplaces with alerts for further analysis.

Her Excellency Maryam Al Suwaidi

“When the stock exchanges get alerts and data from SMARTS Integrity, SCA also gets the same information,” said Maryam Al Suwaidi. “That, of course, has enabled coordination between the exchanges and the regulator.”

Either SCA or the exchanges can prompt an investigation. When a case is started by the exchange based on its own analysis and investigation, it prepares an investigation report which it transfers to SCA for further action. When a case is started at SCA, the Surveillance Section analyzes the trading pattern and collects evidence through its Inspection Section. SCA conducts surprise inspections on violators to obtain information such as the copies of orders, KYC forms, client account statements, records of telephone conversations and other documentary evidence. After collecting the evidence, the surveillance department prepares a detailed investigation report and submits the report to the Director of Supervision, who then transfers it to the enforcement department for legal action.

SCA looks for unusually large trading volumes after a major announcement by a listed company. It also looks for links clients might have with a company, even if they are not identified as insiders or key personnel of those companies. Communications such as news reports, press releases, research, web postings, blogs and company advertisements are monitored for signs of insider trading.

Clients are assigned a unique national identification number (NIN); that number is used even if clients trade through multiple brokers. Each stock exchange has its own CSD, which holds securities in clients’ names, not through sub accounts or other third parties. Beneficial owners are identified immediately, and transfers are allowed only when the beneficial owner is closely related or a family member. Records of beneficial ownership ensure transparency and effective surveillance of all trades.

To prevent wash trades at the client level, the trading system does not allow the same client NIN number on both sides of the trade. In addition, short selling is not permitted.

Maryam Al Suwaidi concluded her talk with a recent case study involving conflict of interest and market manipulation. A company that was cross-listed on both exchanges ramped up its share price on one exchange initially through a series of trades involving millions of shares. A surveillance alert at SCA prompted an investigation that revealed that both the buyer and the seller were linked to the listed company — one individual was a board member — and their orders were timed to manipulate the price. The case has been sent to the enforcement department for further action.

CANADA

Wayne Groom, Client Service Manager, Canada for SMARTS Broker, explained that there are situations where a compliance team is tasked with monitoring trading activity in multiple regions. The orders may originate in one region and be transmitted via DMA to another region. Even if the firm does not maintain a trading operation where the transaction occurs, it must have the appropriate measures and processes in place to comply with regulations.

Consolidated compliance and a global view of several marketplaces makes surveillance more effective and cost-efficient, but understanding different marketplaces, back-office operations, technologies and regulatory regimes can be a challenge.
For example, all seven marketplaces in Canada have different trading hours. Some have opening auctions, and others run continuous trading after the open. Two have closing auctions and some even support broker preferencing.

“You can understand the complexity of looking at all of these marketplaces and the way they conduct business,” said Groom. There are other characteristics that compliance officers need to understand if their firms are actively trading in that marketplace.”

**GLOBAL CROSS-ASSET CHALLENGES**

Michael O’Brien, Global Head of Sales, SMARTS Broker at NASDAQ OMX, discussed the challenges of cross-asset surveillance. For example, someone may try to manipulate an underlying asset to achieve a particular outcome on a related derivative.

Some derivatives are not very liquid and are highly volatile, so special controls are needed to manage these risks. Since there may be thousands of derivatives relating to an underlying security, a significant challenge of cross-market surveillance for broker-dealers is the massive volume of trading data that needs to be processed, maintained, visualized and interrogated.

Compliance staff must monitor for several potential market abuses including cross-market insider trading and front running. “Mini manipulations” involve a short-term ramp of the underlying equity/asset: someone takes a position in an option, pushes up the price of the underlying asset and then cashes out. “Banging” or “marking” the close is a form of market abuse that can happen with options running up to expiry: a trader or client writes options, then manipulates the price of the underlying asset in the run up to expiry so that they expire worthless. Others may try to narrow the spread around settlement time. In addition, technical rule breaches can occur.

O’Brien demonstrated how various alerts work using SMARTS Broker for both listed and OTC options. He visualized all the elements including the volume, price and time on the underlying equity as well as the strike price, expiry month and premium on the options listed on various markets. Then he explained what one might expect to see in a mini-manipulation, and he visualized manipulation by insider trading.

“This lends itself to equities-related derivatives, commodities, OTC dark pools,” said O’Brien. “All this trading data can be imported and brought into the interface, and we can run similar alerts off that different data.”
A NORDIC CASE STUDY IN INTERNATIONAL CROSS-MARKET SURVEILLANCE

PRESENTER:
Magnus Billing
Chief Legal Counsel, NASDAQ OMX European Markets

- Introducing the same surveillance requirements for regulated exchanges, MTFs and other trading platforms will improve market integrity.
- Having no framework for cooperation among venues that trade the same equities creates problems that will only get worse as fragmentation continues.
- Having little information sharing among trading venues and lacking authority to make decisions regarding trading halts needs to be addressed in future regulation.

NASDAQ OMX operates regulated marketplaces in eight European jurisdictions with a total of about 650 listed companies and 180 trading members. Notwithstanding the language barriers and number of regulators involved, surveillance is complex. Magnus Billing, Chief Legal Counsel, NASDAQ OMX European Markets, provided the Nordic perspective on the issues and how to tackle them.

He explained NASDAQ OMX’s approach to real-time and post-trade surveillance in the Nordics. Real-time surveillance is centralized in one location, and the regulators coordinate their response to the central entity. Post-trade surveillance is T+1, and is decentralized. A surveillance team is located in each country, so it can maintain a close relationship with members and issuers and keep abreast of local market trends.

Surveillance has become more challenging in the last few years. The number of venues proliferated much faster than expected post-MiFID, and a significant percentage of trades are now transacted outside regulated exchanges. Trading today is cross-border and fragmented; the same equity can be traded on multiple venues, which has implications for surveillance.

“You have different requirements on surveillance in regulated markets compared to MTFs,” said Billing.

He believes that, as the original rules are revised under MiFID II, it is essential to close the gap. Leveling the playing field and introducing the same surveillance requirements for regulated exchanges, MTFs and other trading platforms will improve market integrity.

Currently, five venues in the Nordics trade the same equities, but no framework exists for cooperation among them under MiFID, which creates problems that will only get worse as fragmentation continues. As more trading occurs away from the NASDAQ OMX-operated exchanges, it will be more difficult to obtain a picture of the entire market and to detect manipulation.

The growth in algorithmic trading volume — which today accounts for about half the flow in the Nordics — and high frequency trading exacerbate the situation.

“You have higher speeds, lower average transaction sizes, a different way of market making, and higher order-to-trade ratios,” said Billing. “That has caused us to think about what changes and adaptations we need to implement from a surveillance perspective as these developments occur.”

Clearly, trading venues need more capacity, but it has become increasingly important for surrounding systems such as surveillance to deal with the enormous data volumes generated. He noted, however,
that there is no indication that high frequency traders are manipulating the Nordic markets more or differently in comparison to more traditional broker-dealers.

Billing illustrated the challenges of multi-market surveillance with a case in which NASDAQ OMX Stockholm called a regulatory trading halt for two hours and 10 minutes in a large cap company. During that time, trading continued on a major MTF in Europe. Under MiFID, when an exchange decides to call a regulatory suspension, it has to get confirmation from its regulator. If the same equity trades on another venue in a different country, the exchange’s domestic regulator contacts the foreign regulator to coordinate the halt.

"Considering the speed of trading today, it’s a fairly long process to go through, and in this case, it didn’t even happen," said Billing. “To me, that’s worrisome.”

In another case, the Oslo Stock Exchange halted trading in a particular equity for about three hours. Because it was a non-regulatory halt, the MiFID procedure was not enforced and trading continued on other venues. This incident highlights the gap between a regulatory and non-regulatory halt.

Fragmentation can leave the door open to cross-market manipulation, Billing warned. Trading activity on one venue may look normal, but cross-market manipulation may become apparent when the activity on another trading venue is added to the picture. He cited a case where selling a particular equity on the primary market affected the price of warrants on another trading venue. In another case, a trader placed a large sell order at the close on one marketplace to push the equity price down, and then placed a buy order on another venue.

Centralized real-time surveillance enables NASDAQ OMX to see a complete picture of the Nordic markets. It is investing in technology to cope with the demands of a fragmented trading environment. In addition, it is working closely with the regulators to establish procedures and mechanisms for enforcing surveillance.

Two shortcomings still need to be addressed: the lack of information-sharing among trading venues and the authority to make decisions regarding halts. A consultation paper released in December 2010 on MiFID II addressed the first point. It proposes that when a trading venue decides to suspend trading, it should disclose the decision to all venues and regulators concerned. The other venues must halt trading unless they have a valid reason not to do so.

Billing does not think the proposal goes far enough. “I don’t think this will solve the problem. It’s unclear what kind of information should be shared. It does not deal with the issue of who has the authority to take the decision cross-border,” he told the audience. “It’s still a process where you have many parties involved in a chain of trading halts, which is a slow process in these ultra-fast trading markets.”
HIGH FREQUENCY TRADING AND DARK POOLS

HFT: THE NEW NORMAL

PRESENTATION:
Lorne Chambers
Global Head of Sales, SMARTS Integrity, NASDAQ OMX

> New behaviors are causing some standard surveillance algorithms to lose their relevance.
> Surveillance professionals need to monitor for bait and switch and layering scenarios with the understanding that high frequency trading can generate false positives.
> Two of the challenges still to be overcome are defining patterns that indicate intentional manipulation through layering and determining when to accept certain behaviors as normal.

High frequency trading (HFT) and other factors have contributed to increased message volumes. In many cases legacy surveillance systems have not kept up, and they are triggering too many false positive alerts. One solution is to upgrade to higher-capacity systems, but that does not completely solve the problem. The upgrade has to be coupled with a better understanding of market participants’ behavior.

Lorne Chambers, Global Head of Sales, SMARTS Integrity, explained that surveillance professionals have to adjust to a new normal because algorithms that used to be considered standard are losing some relevance. SMARTS’s unusual number of deletes alert to detect spoofing is a case in point. Spoofing — when orders are entered with the intention of altering other people’s trading behavior — is traditionally signaled by an unusually high proportion of orders that are entered and then deleted unexecuted at the end of the day. But with the proliferation of HFT, this is now normal behavior in the U.S. and increasingly in global markets.

New behaviors have emerged as markets have become more fragmented. Surveillance professionals need to watch for traders that game their executions in dark pools with corresponding actions on lit markets. They
test liquidity by pinging a small order into a dark pool to see if it gets executed. Then they enter an order on the lit market to narrow the spread and ultimately execute a larger order in the dark pool.

“Compliance and surveillance professionals are asking for guidance to determine what behavior is okay and what’s not,” said Chambers. “Where do we set limits in our detection algorithms? What are the gray areas?”

During 2007, one instance of layering activity triggered 58,000 alerts on the LSE while the broker who perpetrated it profited by about £1.75 million. The broker was ultimately fined £8 million in 2011. In a similar example, a broker layered 35 times across five price steps in one day with one layer being counted each time there was a flip from the bid to the offer. At any one time, there were up to three orders for the participant at each price step on the layered side of the book. The broker would trade roughly $700,000 in shares with a profit of £1,800 per security which adds up when replicated across multiple securities.

“Having turned that scenario into an algorithm, we look for x number of orders on the bid and then y or less on the offer,” said Chambers. “You count the number of times they flip that position, you look for a certain number of cases, and you trigger an alert.”

He noted, however, that high frequency traders may appear to be layering when they are actually market making. The surveillance team should note which side the broker is layered on and only count the trades that are executed against the layered side — and calculate the end-of-day net profit. A profit that exceeds a certain amount should generate an alert.

In fragmented markets, manipulators can layer orders on one book and trade on others, so SMARTS Integrity now offers an extension to its algorithm to detect this activity. Instead of counting the trades of the layered broker, it counts all the trades while a layer is activated. Then it ranks all the brokers at the end of the day based on their profits while the layer was in place. The objective is to find the broker that consistently profited while another broker was layered. These could be the same broker, albeit with different identifiers across different venues.

Finally, Chambers pointed out some challenges still to be overcome. For one, the granularity of the data obstructs the analysis. It is particularly difficult to separate the flow of a broker that is market making from direct market access flow. Another extension is whether layering is more serious if the manipulator places passive orders on the opposite side of a layer that gets hit, rather than aggressively trading against orders that price improve on their layer. Moreover, observers question whether layering needs to be profitable to be considered manipulative.
REAL-TIME RISK MANAGEMENT IN HIGH FREQUENCY TRADING

MODERATOR:
Ted Myerson
Chief Executive Officer, FTEN, a NASDAQ OMX company

PANELISTS:
Ari Burstein
Senior Counsel in the Investment Company Institute’s Securities Regulation Group

Manisha Kimmel
Executive Director, Financial Information Forum

Jim Toes
President and CEO, Security Traders Association

Irene Halpin
Vice President, JP Morgan Chase

Gary LaFever
Chief Corporate Development Officer at FTEN, a NASDAQ OMX company

The U.S. Market Access Rule (MAR) is a game changer for the industry.

Private data clouds may be a solution to managing risk for high frequency trading (HFT) firms.

Fragmentation provides competition, but it also increases the complexity of the trading model.

Naked access has been a major concern for U.S. regulators. The Market Access Rule (MAR) was drafted to address the naked access issue, and industry participants view it as a game changer in risk management. The first phase came into effect on July 14, 2011; now any order sent to the market must go through pre-trade risk controls. From November 30, 2011, broker-dealers need to know their client’s aggregated credit standing across all trading venues, systems and asset classes before releasing orders to the market. Canada has a similar rule, and the European Union is going down the same route with MiFID II.

Gary LaFever, Chief Corporate Development Officer at FTEN, a NASDAQ OMX company, stressed the importance of coordinating the law with what is technologically feasible. “Managing risk in real-time is a tall order and a significant undertaking,” he said.

Few of the top financial institutions can calculate market risks, credit value adjustments and potential future exposure in real-time or near real-time. In fact, most rely heavily on overnight calculations, so they are making decisions based on stale data. Most existing systems are too slow and inflexible to deal with exacting market requirements. Given their disparate nature and general lack of integration, it has been a challenge for broker-dealers to address MAR in a holistic fashion. The high percentage of order modifications only complicates matters.

“We’re diligently working on developing the theoretical and technological programs to implement the necessary credit controls,” said Irene Halpin, Vice President at JP Morgan Chase. “It’s a significant lift for firms, both large and small, to adopt a framework that will enable us to manage a client’s portfolio across all asset classes in real-time.”

From the buy side perspective, large firms such as mutual funds do not use naked or sponsored access as much as other institutional investors who may be more concerned with latency. They recognize the value of regulators and brokers having real-time information for monitoring purposes, with the caveat that data barriers need to be constructed to ensure confidentiality and to prevent information leakage.

High frequency trading firms deploy a labyrinth of connections, which has implications for risk management. One approach is to enable market participants to supplement internally-generated data by gathering real-time order and execution data from all liquidity destinations. This could be done through a private data cloud, which would be a cost-effective and relatively straightforward solution.

Jim Toes, President and CEO, Security Traders Association, noted that regulators are obligated to conduct cost-benefit analyses before passing rules. If systems or resources are required to fulfill obligations, private sector vendors should be allowed to meet the need.
“We’d rather not have regulators provide solutions because we feel at that point we are tied to them, and they could be inefficient and costly,” he said.

There has been some discussion about whether fragmentation contributes positively to price discovery and liquidity. The Investment Company Institute (ICI) was a proponent of Reg NMS partly because it introduced competition and also because it recognized that having 50+ venues raises other market structure issues. Splitting large orders into 100-share lots is inefficient, and the impact on transparency and price discovery is unclear.

Meanwhile, broker-dealers face the challenge of digesting the regulatory regimes of more than 50 exchanges, venues and dark pools. The flash order type is a case in point. Not all exchanges adopted it, and there were different iterations for those that did, thus creating opportunity and potential for confusion among the participants trying to interact with the order flow.

In addition, broker-dealers are struggling with the volume and integrity of data. Since the circuit breaker program began in July 2010, there have been many Volatility Trading Pauses, which indicates that bad data has gotten into the marketplace and that participants are reacting.

“It just increases the complexity of the trading model,” said Halpin. “On the other hand, you’ve got competition, you’ve got great price discovery, and you’ve got a robust marketplace, so it’s a tradeoff.”

Finally, panelists addressed the drive for ultra low latency and the implications for pre-trade risk management. Much depends on the type of HFT firm, Manisha Kimmel, Executive Director, Financial Information Forum explained. A proprietary trading shop with no customers trading in about 100 securities would not have a problem embedding pre-trade risk controls into its systems. That may not be the case for a large, diversified global firm running an ultra low latency platform along with traditional and program trading desks.

Ultimately, the markets are better than they were a few years ago despite the challenges of trading large orders, high frequency trading and fragmentation. Regulators and market participants need to keep in mind that rules written by lawyers are implemented by technologists. Because the devil is in the details, taking the time to do so properly is in the industry’s best interest.
Canadian regulators recognize that high frequency trading can contribute to market efficiency.

IIROC has received some complaints about predatory and manipulative behavior from some high frequency traders.

High frequency traders generate large message volumes, so IIROC may start charging them a fee for every message they send to regulators.

Mike Prior, Vice President, Surveillance at IIROC, talked about how his organization uses data from SMARTS Integrity to study high frequency trading. IIROC went live on the surveillance platform in May 2010, and the system now averages 250 million messages per day.

HFT is not a strategy in and of itself, he explained, but it enables certain strategies, some of which have existed for years. These include activities akin to market-making, i.e. trading back and forth on the bid and offer to try to capture the spread, as well as various types of arbitrage trading.

“We are also seeing some high frequency trading that I would classify as predatory,” said Prior. “That’s a fairly inflammatory word. I’m not saying this behavior crosses the line into manipulation or front running, but it certainly generates a lot of complaints.”

In Canada, HFT tends to consist of rapid in and out transactions — sometimes buying and selling within the same second — in small size. While the profit per trade is minimal, it can become substantial over the course of a day.

Prior pointed out that HFT contributes to market efficiency, notably tighter spreads and greater market depth in certain cases. Apparently, when HFT traders can change their orders to react to the market, they are willing to commit to larger order sizes.

“There have been suggestions to require orders to remain on the book for one second or more,” said Prior. “I think you would probably see some order sizes shrink and spreads widen if this type of arbitrary rule is enacted.”

Yet IIROC has received some complaints about high frequency traders trying to anticipate other traders’ strategies and execute transactions ahead of them. IIROC does not consider that front running because high frequency traders do not have fiduciary responsibility, and they use publicly available information to try to ferret out other traders’ intentions. This strategy of “reading the tape” has been going on for as long as markets have disseminated post-trade data. The only change is that high frequency traders can now read the tape, make decisions and place orders based on real-time data. Other complaints pertain to HFT traders using “momentum ignition” strategies, which IIROC classifies as “layering” and a destabilizing force in the market.

There have also been accusations of “quote stuffing,” or flooding the data feeds with unnecessary message traffic to try to tilt the data “playing field.” However, excessive quotations can also be attributable to malfunctioning algorithms. Sometimes there is unnecessary intermediation. The spread is already at its narrowest point, and HFT traders are simply intermediating trades that would have happened anyway just to pull rebates out of them.
Another issue is these traders generate a huge amount of message traffic, which the regulators and other market participants have to process and store in their databases.

“We still call ourselves real-time regulators, but HFT traders are making it a challenge for us to remain real-time,” said Prior. “On August 8th in Canada, we hit a record high — about 474 million messages that we had to take in real-time. The SMARTS Integrity system kept up, but this type of behavior is starting to stretch us to the limit.”

IIROC is commencing a study of high frequency trading. One objective is to establish a Canadian definition of HFT. IIROC assumes that client HFT traders use direct market access (DMA), and all DMA orders must include a unique client identifier in Canada. Once the data is captured, IIROC will model trader behavior using metrics such as order-to-trade ratio, rate of trades and number of trades, and develop a profile of a typical high frequency trade in Canada. Then, it will ask dealers to identify clients who meet the criteria.

Once IIROC is in a position to identify all HFT orders and trades, it will create statistics on HFT behavior, such as the stocks traded, the time of day, the market conditions at trade, the conditions under which these trades pull out of the market, etc. The final step is to conduct an academic study, possibly with the help of Capital Markets CRC students, with the goal of determining the impact of HFT on market quality, market integrity, and investor confidence.

Prior presented an example of what appeared to be a high frequency trader using “quote stuffing.” This activity resulted in 5.8 million quote changes in a single stock over the course of one day. The average duration was less than one millisecond; another order entry came in every 10 milliseconds.

“It didn’t really have the effect of “quote stuffing” or bogging down the system, but of course, some observers became convinced that’s what it was,” said Prior. “We’re still reviewing the case and talking to the people responsible to determine exactly what happened.”

Another case under investigation involves a high frequency shop executing what it calls a price discovery strategy. For example, when the natural spread was $1.83-1.85, the traders would bid $1.84 for 50 milliseconds. If a trade was not executed, they would offer at $1.84 for 50 milliseconds. The switching continued for some time.

“It’s hard to say whether that behavior is wrong, but certainly the trader is imposing a cost on the industry because everybody on the street has to consume, process and store every quote that this trader generates,” said Prior.

He concluded his presentation by recognizing the need to reduce message traffic. Instead of implementing a one-second rule or creating another arbitrary way to achieve the objective, Canada is considering a new regulation fee model. It proposes charging dealers for every message they send to IIROC, which, in turn, is likely to be passed through to the end clients who generate the messages.

“We still call ourselves real-time regulators, but HFT traders are making it a challenge for us to remain real-time.”
THE IMPACT OF DARK POOLS ON MARKET EFFICIENCY AND INTEGRITY

MODERATOR:
Professor Mike Aitken
Chief Scientist, Capital Markets CRC

PANELISTS:
Mike Prior
Vice President, Surveillance, IIROC

Frank Hatheway
Chief Economist, NASDAQ OMX Group

Vanessa Gardiner
Director, Trade Floor Supervision, Scotia Capital

Industry participants in the U.S. and Canada agree that transparency should be the default of the market, but there are benefits to dark pools.

Canada is reviewing its regulatory regime to ensure the right participants can benefit from dark pools without damaging price discovery in the lit markets.

Broker-dealers are concerned about regulatory calls for a minimum order size and mandatory price improvement for small trades in dark pools.

Fragmentation is good for competition, but the jury is still out when it comes to its impact on price discovery and liquidity. Exchanges, regulators and broker-dealers are debating the effect of dark pools on market efficiency. Dark pools come in various shapes and sizes. Block trading venues such as Liquidnet cater to multiple large institutional participants who interact in an environment intended to minimize information leakage and price impact. Internalization pools have one liquidity provider that interacts with retail and institutional clients. Ping destinations enable clients to receive high speed responses from a single liquidity provider, who will match or better the NBBO. In addition, some broker-dealers operate complex internal matching engines that have all these features as well as those of an exchange rolled into one.

Frank Hatheway, Chief Economist at NASDAQ OMX pointed out that transparency should be the default of the market. Displayed limit orders set the benchmark price for a given security and should be rewarded with an execution. Furthermore, investors have more confidence when they understand the rules of the marketplace and how their orders are handled. That said, he believes large institutional orders should be allowed to meet away from organized markets to consummate a trade or search for a counterparty in a way that does not disrupt the market price. In fact, NASDAQ OMX offers hidden orders on the exchanges it operates, but displayed orders have priority at the price.

In the U.S., the volume of trading in dark pools depends on the stock and the trade modality at a particular point in time. Hatheway estimates that about 40% of the executed share volume is transacted in these venues, and the volume may be correlated with market quality measures such as spreads.

“It can be that increasing darkness causes deterioration of market quality,” warned Hatheway. “It could also be that deterioration of market quality of the lit markets, which is what we’re using to measure market quality in these cases, further encourages trading in the dark markets, creating a negative feedback effect for the market.”

Canadian exchanges have offered iceberg orders for more than a decade, and there has always been an “upstairs” market to help facilitate large trades. But currently, there are only two dark pools operating in Canada; only dealers participate in them, and IIROC estimates the total transaction volume is less than 5%.

“We’re trying to keep internalizing and gated communities out of Canada to make sure there’s fair access to all liquidity, dark or lit,” said Mike Prior, Vice President, Surveillance at IIROC.

“It may actually have the effect of limiting the number of dark pools in Canada because those dealers who might set up an internalization engine may be discouraged from doing so.”

It can be that increasing darkness causes deterioration of market quality.
Canada’s framework of rules ensures that dark orders do not negatively impact the visible markets and price discovery. The Order Exposure Rule, for instance, requires putting any retail-size order in the lit market to contribute to price discovery, unless the client requests a different treatment.

Yet there have been complaints about predatory orders hiding in dark pools. Traders could put small buy orders in dark pools, and if they were filled, they could assume potential sell residual balance orders were on their way to the visible markets. Through co-location, they could beat these sell orders, clear out the existing bids, enter lower bids and wait for the sell orders to come. IIROC is also monitoring for potential manipulation of the NBBO through dark pools.

Since IIROC recognizes that dark pools have a role to play in Canada, the rule regime is being reviewed to ensure the right participants can benefit from these venues without damaging price discovery in the lit markets.

To this end, IIROC and the CSA have proposed rules setting a minimum size for passive orders in dark pools and requiring visible orders at a price to have priority over dark orders at the same price at the same marketplace. Further, it proposes allowing larger block orders to trade anywhere at or between the NBBO in the dark, but small trades must occur at an improved price. The proposal defines a large order as 5,000 shares, and the minimum price improvement is a full tick.

Vanessa Gardiner, Director, Trade Floor Supervision at Scotia Capital commented that her firm only uses dark pools to tap hidden liquidity to meet best execution obligations for retail customers. She questions whether dark pools are large enough in Canada to warrant the attention they are getting. Still, she is concerned about possible information leakage if small orders are allowed to actively trade with larger orders.

“My firm is not particularly a firm that ever supported the dark pool area. If we had voted on it when they came in, they probably would have gotten a hands-down no from my organization,” she told the audience. “That being said, we still recognize that there are some benefits.”
Bill Nosal, Senior Managing Director at NASDAQ OMX, highlighted some current practices and trends in the energy, commodity and fixed income markets. He discussed the market drivers for automating surveillance and touched upon some of the key alerts that firms use to monitor these asset classes. He also demonstrated some tools that allow compliance professionals to quickly assess the validity of alerts and to visualize data sets for use as a point of discussion with traders and regulators.

The regulators have focused on energy and commodity markets recently. These markets are challenging to understand and monitor because their products are complex, and they are traded both on-exchange and OTC. As a result, various U.S. regulatory agencies, including the Commodity Futures Trading Commission (CFTC) and the Federal Energy Regulatory Commission (FERC), have been cooperating in their surveillance efforts and have made it clear that they are serious. Market manipulation carries penalties of $1 million per day per violation, the revocation of trading registrations and possible imprisonment. Moreover, in July 2011 the CFTC adopted rules under Dodd-Frank that upped the ante even more.
“Now reckless trading behavior is a violation regardless of whether the conduct in question was intended to create, or actually did create, an artificial price,” Nosal explained. “That can be a scary revelation for some firms.”

Not surprisingly, firms are responding to these pressures by establishing a compliance plan that provides clear documentation, prevention and detection. They are watching for indications of manipulative behaviors such as Wash Trades, “banging the close,” intraday ramping, front-running and false reporting of trades. They are also on the alert for specialized behaviors, such as, creating artificial congestion in natural gas pipelines.

Extracting data from energy trade risk management systems, combining it with data from other systems and interpreting it to support surveillance is difficult. Time stamps are rarely used in energy and commodity trading, so it is difficult to determine the sequence in which trades occurred.

“If you’re in these businesses or getting into these businesses, it’s important to consider whether there need to be some changes at the trading desk, in the technologies and with the tools that you use there,” said Nosal.

Surveillance is not just about alerts, he reminded the audience. Broker-dealers are discovering tremendous value from using the SMARTS Broker product to generate a trade blotter and to aggregate and visualize their OTC and on-exchange trade data.

By comparison, regulators are getting a better handle on monitoring the fixed income markets. Moreover, an automated set of alerts is clearly established for broker-dealer compliance in this sector. Some of the behaviors that firms look for include: Wash Trading, parking, unusual mark-ups and/or mark-downs in reportable or non-reportable securities, unseasoned securities trading and insider trading. One of the greatest challenges that fixed income compliance professionals face is determining whether a particular trade is fairly priced, especially in less transparent markets outside the U.S.

“The SMARTS Broker team is excited about our ability to provide these various new approaches for fixed income, energy and commodity surveillance,” Nosal concluded. “We’ve invested heavily in obtaining market and reference data to make the surveillance of these challenging markets as close to a turnkey solution as we possibly can.”
The regulator’s mandate is to ensure markets are fair and efficient. Since the Flash Crash tested the financial markets, people are questioning the merits of electronic trading, especially the high frequency variety, as well as short selling and other practices. The decision to allow, ban or restrict these practices should be taken within the context of striving for optimal market design.

Several factors affect market design, including technology, regulation, information, participants and instruments. Subsystems within technology include order routing, trading, surveillance, clearing and settlement. Industry stakeholders (e.g. regulators, market operators and financial intermediaries) change these factors from time to time, and regulators approve them on the basis that they positively affect (or at least do not negatively affect) market fairness and efficiency. But what does fair and efficient mean, and how can this information be put to practical use?

“I define an efficient market as one that’s cheap to trade on and where the price at which I’m trading reflects all available information,” said Mike Aitken, Chief Scientist at the Capital Markets CRC. “If I want to
know if a change in information or regulation is good for a market’s efficiency based on my definition, I need to measure factors like transaction cost and price discovery pre and post the market design change.

Surveillance professionals are the guardians of the fairness aspect of market quality. Among other irregularities, they look for manipulation of end-of-day prices or prices of options close to expiry. They look for spikes in prices or volume prior to expected or unexpected announcements that may indicate insider trading, a subset of information leakage. They also monitor for signs of broker-client conflict such as front running. In effect, besides identifying wrong doers, surveillance analysts actively participate in the debate on market design change by offering metrics for fairness that can be studied pre- and post-market design changes.

Professor Mike Aitken

Surveillance professionals are the guardians of the fairness aspect of market quality. Among other irregularities, they look for manipulation of end-of-day prices or prices of options close to expiry. They look for spikes in prices or volume prior to expected or unexpected announcements that may indicate insider trading, a subset of information leakage. They also monitor for signs of broker-client conflict such as front running. In effect, besides identifying wrong doers, surveillance analysts actively participate in the debate on market design change by offering metrics for fairness that can be studied pre- and post-market design changes.

Ultimately, the goal is to strike the right balance between integrity and efficiency. As Aitken said, it is important to avoid making market design changes that increase efficiency but decrease integrity and vice versa.

Professor Frederick H.deB.Harris, John B. McKinnon Professor of Economics and Finance at the Wake Forest School of Business, explained the CMCRC’s framework for measuring the effects of market design changes on efficiency and integrity. In essence, it involves a three-way simultaneous equation in which market design change, efficiency, and integrity are the independent variables requiring explanation.

Harris compared various SMARTS screenshots to give the audience a sense of how surveillance information can be used. In one instance, the arrival of normal positive information led to a permanent change in the level of the security by around 10%. Another instance showed a security trading up about 10% on very heavy volume but, the next morning, reverting back to the mean price prior to close. A statistically significant event like this can happen for several reasons including a rumor that is successfully rebutted overnight by the company, a partial disclosure that has been misunderstood, a misleading disclosure that has been clarified overnight or an attempt at ramping manipulation.

Data was collected from 31 exchanges worldwide between 2000 and 2005 to determine the number of ramping events per day per thousand listed securities. This metric ranged from a low of only .08 to a high of 1.76. The sample mean worldwide was .88.
"With about 250 trading days a year, one in every four to five stocks requires a screen alerting surveillance professionals to a ramp sometime during the year," said Harris. "Our interest has been in trying to figure out why there’s so much variation in that number — from one in fifty in the highest integrity markets to one in two stocks in lower integrity markets — and then modeling it.”

The study found that the liquidity deciles are extremely diverse. A person ramping at the least liquid level is easily detected, indicted and prosecuted. In the most liquid level, a manipulator has to ramp the volume enough to convince partially-informed liquidity traders that they can benefit from an information leak. That is a far more expensive proposition for the manipulator. Meanwhile, ramping activity in the middle liquidity levels is extensive.

Aitken and Harris’ research framework enabled them to look beyond correlations and actually trace the inter-relationships between integrity, efficiency and market design changes. Their results show that markets that are more manipulable are 31-59 basis points clearer to trade in, providing for the first time a quantifiable indicator of the benefits to markets with higher market integrity.

Their studies revealed that ramping manipulation leads to greater induced volatility and less aggressive order placement because there is less chance of not executing. As a result, if there is a ramping event in the market, the prices for larger trades will spread away from the BBO substantially. Essentially, there is a 99% positive correlation between ramping incidents and the size effect on spreads.

Using data from the 31 exchanges to trace the effect of market design on market quality and efficiency, Harris and Aitken studied the probability of transaction costs having an effect on market integrity.

Their research also showed a positive change in integrity and efficiency when a market design change, such as introducing a real-time surveillance system, is introduced. Some variables considered included whether the marketplace had a closing auction, direct market access and price limits, as well as the jurisdiction’s legal environment (e.g. codified civil law or English common law). So far, the model indicates that direct market access, rules on market surveillance, a commitment to enforcement and real-time surveillance enhances both efficiency and integrity, but circuit breakers and some closing auction designs appear to result in an efficiency/integrity tradeoff. For the full paper see, “Trade-Based Manipulation and Market Efficiency after the Introduction of Real-Time Surveillance: A Cross Market Comparison” working paper, CMCRC 2010. You can access the paper at: http://www.cmcrc.com/index.php/rd/academic-papers/academic-papers

No doubt this information piqued the interest of the audience, and they will look forward to further analysis in the future.