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# Market Surveillance in Europe: Under Starter's Orders



## Vision

Anyone who trades electronically or provides algorithms for others to access automated financial markets needs to pay attention: the European regulators have just reloaded the starting gun. The European Securities and Markets Authority (ESMA) published its final "Guidelines on systems and controls in an automated trading environment for trading platforms, investment firms and competent authorities" in December 2011, and these guidelines will apply as of May 1, 2012 to all those who choose to trade electronically, regardless of instrument or asset class.

Whilst many market participants may feel they already have sufficient systems in place to **address ESMA's requirements for** automated trading in equities, this is not true for all asset classes or all participants. Even for those who have solutions in place, existing systems risk becoming overwhelmed with the sheer volume and complexity of algorithms and requisite data. Necessary controls and procedures are fast proving inadequate ahead of the further legislation coming down the pipe.

With high-frequency trading dominating the headlines for all the wrong reasons, a misconception of what exactly HFT is may lead to the danger of over-regulating effective liquidity-provision. **Europe's regulators** have a far greater challenge than other global regulators; ESMA is underpinned by national regulators and politicians who sometimes have both very definitive and different views of fair and orderly financial markets.

The finance industry now has a stark choice. It must demonstrate a corporate group responsibility and fully engage with the legislative process to restore faith in the markets, or accept the inevitable disparagement of the industry and the regulatory strait jacket in which it will undoubtedly be cast.

As the trend towards automated trading is set to continue, and asset classes are forced out of the opaque shadows of the OTC world onto exchanges, the need for improved surveillance is even more critical. The result will be an ever-increasing pressure on financial services firms to collate and analyse escalating data volumes in their legacy systems, just when budgets are being tightly squeezed and any available cash for investment in technology and back-office services is evaporating.

Yet the stakes have never been higher, and regulatory compliance has undergone a sea change at board level. The need for investment firms to appear beyond reproach and invest critical resources to uphold their firm's integrity and avoid heavy fines, is making reputational risk the mantra of compliance officers and risk managers alike. Market surveillance is now the staple diet with which to sift through a wealth of data to satisfy the regulators. There will always be bad apples, but the ability to identify errant employees or trades is now a matter of survival.

Internal surveillance independent of external monitoring by the regulators is essential. By firms finding internal faults ahead of the game, the opportunity exists to find solutions away from the glare of publicity and exercise successful damage control. **In today's high**-scrutiny environment, market participants who implement effective surveillance programmes to

uphold a vision of long-term integrity will differentiate themselves from the pack in a shrinking commission pool.

While the usage of surveillance systems to collate, analyse, monitor and report on risk is on the rise to meet growing legislative requirements, the latest tools and technology not only provide detection, deterrence and prevention, but also deliver operational efficiencies. This creates new commercial opportunities for differentiation.

As the regulatory focus from Brussels shifts towards a greater pre-transactional assessment of risk, the wealth of valuable information and data generated in a centralised pooled resource is rewriting the rulebook for surveillance. By building a network of internal and external processes for traders, portfolios, back office and front office groups globally, firms can holistically and proactively spot internal strengths and weaknesses throughout their organisation. Behaviour patterns and peer analysis can be analysed, developed and cultivated to maximise potential opportunities, spawning a whole new industry for the next generation of surveillance and optimal operational efficiency.

Regulation may have been the trigger, but as a result, market surveillance in Europe is entering uncharted waters of infinite possibility, where fortune will favour the brave.

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## Introduction

Fear of facing the growing wrath and reach of the regulators is pushing new requirements to the fore across all asset classes. Whether market surveillance is viewed as a regulatory necessity or as a differentiator to monitor real-time trading strategies on a global scale, the level of complexity for market surveillance is changing tack from national to cross-border regulation, from post-trade to real-time.

**Today's smarter algorithms and the incorporation of social media to automate portfolio** management obliterate the original remit for market surveillance as a look-back, check-and-balance on the market. The financial crisis pushed surveillance programmes to protect stock markets from mayhem, restore investor confidence and stamp out abuse. With MiFID, MiFIR, MAD and EMIR, regulators are imposing a huge new regulatory burden at a time when budgets are lean and brokers, vendors, and the buy side must all reinvent themselves to survive.

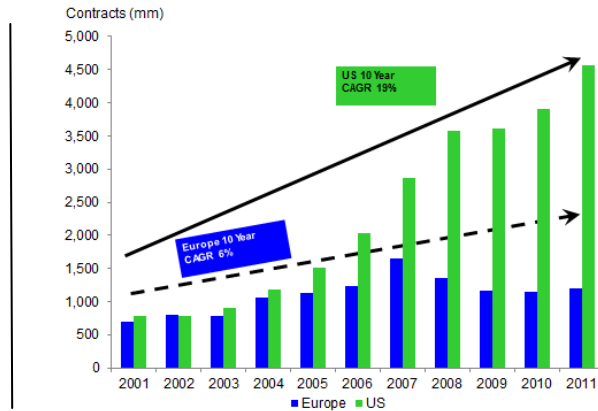
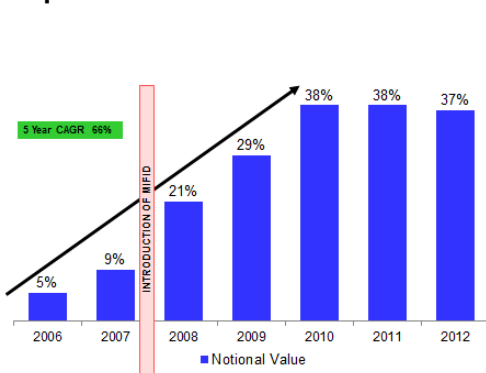
However, mandated regulation can create new opportunities. By managing risk more effectively, brokers are able to offer more-competitive pricing across a wider product range, and monitor individual **traders' performance to improve execution performance**. Likewise, brokers offering trading venues can scrutinize trading behaviour and responses, thereby measuring the impact of automated trading on liquidity and the subsequent trading tools that are required to interact with it.

Following the initial publication of the guidelines in December 2011, ESMA has now officially translated the proposed rules into all the official languages of the European Union. A transitional period of two months has now been triggered, during which national supervisors must declare whether they intend to comply with the issued guidelines under Article 16 of ESMA regulation, outlining how uniform and consistent application of MiFID and MAD should be applied. Those who choose to decline will have to explain the reasons for non-compliance, which will be made public by ESMA, and the implications of which have yet to be seen. Market participants have until May 1 to be compliant.

Whilst many in the mature automated equities markets have viewed the guidelines as an effective due diligence exercise, there is no room for complacency. The guidelines have outlined what is expected of all market participants who trade electronically, regardless of the asset class traded. More importantly, ESMA also provides a clear indication of the direction of future regulation and automated trading will remain firmly in its sights.

High-frequency trading (HFT) is now a permanent feature of European equity trading, and as other asset classes also continue towards automation and increased volumes the data overload is exponential (see Exhibits 1 and 2). Whilst European volumes are not as high as in the US, the combined impact with the proliferation of trading venues makes it increasingly difficult to see what is happening where. In the absence of strong market surveillance, and as algorithmic trading moves into other conceivably more-risky and complex derivatives, the potential fallout from a flash crash increases in severity.

**Exhibits 1 and 2**  
**HFT Trading in European Equity Markets 2006-2012(e)/ The Growth Of European Options Volumes in Europe 2001-2011**



Source TABB Group

Therefore, industry participants will need to demonstrate their ability to successfully manage risk through correct surveillance systems and procedures. If the industry fails to self-police effectively for potential breaches of rules or incidents of market abuse, the regulators will be under pressure to impose draconian rules and greater controls on automated trading.

## The Legislative Risks Ahead

Ambiguity remains amongst European firms over ESMA's May 1 guidelines, and there is therefore many an internal debate about the best course of action. On the one hand, mature European equity divisions are confident that current systems are robust enough to meet even the most rigorous regulatory scrutiny. But step away from the vanilla equity offering, and the compliance cracks begin to appear.

The main area of focus for Steven Maijor, chairman of ESMA, is the impact of automated trading: *"ESMA is committed to ensure that technological innovation does not pose a risk to the orderly functioning of the markets and.. these guidelines will contribute to the stability and robustness of European electronic trading systems, which is why ESMA implements these guidelines now without waiting for the completion of the MiFID review<sup>1</sup>".*

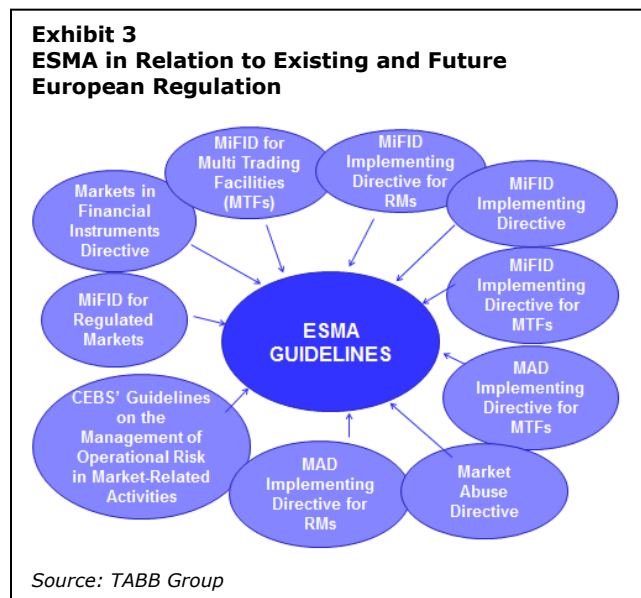
The myriad of acronyms surrounding European financial markets legislation show compliance officers drowning under a sea of regulation. However, clarity is starting to emerge as to the level of regulation required, as well as the extent of the complex web of interconnecting legislation for different market participants and methods of access (see Exhibit 3).

### All About Algorithms

The guidelines cover obligations in three key areas, namely trading platforms, investment firms and fair and orderly trading. As such, they affect both those who use and deploy algorithms as well as those who offer the trading environments. Given the extensive use of automated trading today, this affects nearly all participants in the marketplace.

Not only does the regulators' collective arm now have a long reach, but the guidelines contain a number of key points that **together create a spider's web of complexity:**

- Organisational requirements will need to be in place to ensure the robust and efficient performance of algorithms and electronic trading systems (ETS) irrespective of market conditions. This will include establishing sufficient capacity to cope with future reasonable volumes. The onus on market participants to assess what



<sup>1</sup> ESMA Press Release 22 December 2011, ESMA/2011/457

**"sufficient" means and balance budgets with a high level of flexibility to expand according to market activity.**

- The ability to provide adequate risk controls to mitigate risk on an **"as close to real time basis as possible"**<sup>2</sup> – which includes effectively assessing exposure to individuals and groups of clients, traders, trading desks or the investment firm as a whole. This will prove challenging for those firms who remain regionally siloed.
- Firms will have to prove they have sufficient systems and controls in place to ensure the prevention of market abuse, in particular, market manipulation. HFT strategies deemed to be abusive have now been expanded to potentially include PING orders. These small orders are entered to ascertain the level of hidden orders and particularly used to assess what is resting on a dark platform. This guideline is likely to have implications for a wide variety of algorithmic users using dark strategies. Some regulators take the view that sending a small limit order without the full quantity behind could be construed as market abuse. However, the reality of market impact in European markets currently means that the ability to test the market surreptitiously can be the difference between successfully executing a large ADV order or not.
- Firms will be required to focus on algorithmic trading activity, cross-market where possible, to account for the interconnectedness of trading in different asset classes and on different platforms.

Each market participant has a different set of requirements according to its business, but a multi-faceted broker offering DMA, sponsored access and with multiple business lines and an internal dark pool faces more challenges than may appear at first glance. To ensure full compliance, the guidelines need to be viewed in a greater context, as they cover how European law should be applied to ensure uniform and consistent application of both the Market Abuse Directive (MAD) 2003 and the Markets in Financial Instruments Directive (MiFID) 2004 in an automated trading environment (see exhibit 4).

Global bulge bracket firms may be able to switch resources and budgets, but are equally challenged stretching limited resources across time zones and competing divisions. Second-tier firms may be leaner but are also often working with legacy siloed systems within regional boundaries, all of which restricts their potential to expand to a truly global offering. Once the interconnectedness of the markets must be considered, the lid is lifted on the **regulatory Pandora's Box and the complexity of potential requirements is akin to being permanently trapped in a labyrinth.**

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<sup>2</sup> ESMA, Final Report December 2011 – Guidelines 1,2,3 and 4h



**Exhibit 4**  
**ESMA Guidelines and their Impact**

Guideline	Relevant Legislation	Impact
Ability to surveil for market abuse cross asset, cross border where possible according to a firms interconnectedness of trading	MiFID, MiFID Implementing Directive, MAD and MAD Implementing Directive	<ul style="list-style-type: none"> <li>• Legacy systems often regional and asset based.</li> <li>• Growth in global cross-asset trading will require multiple systems to be interlinked</li> <li>• Different regulatory requirements according to asset class and location</li> </ul>
Prevention of market abuse real-time	MiFID, MAD, MAD Implementing Directive for RMs And MTFs.	<ul style="list-style-type: none"> <li>• Further automation of orders will lead to data overload.</li> <li>• Static systems risk generating too few alerts to spot the market abuse, or too many drowning potential checks</li> <li>• To include cross-market where possible.</li> </ul>
ETS to be robust enough to ensure continuity and regularity of performance with sufficient capacity to accommodate increased volumes of messaging	MiFID & MiFID Implementing Directive for MTF's & RM's	<ul style="list-style-type: none"> <li>• Onus on market participants to establish what is "sufficient" and when.</li> <li>• Flexible systems will be required to expand with increased market activity without incurring increased costs or delayed implementation</li> </ul>
Expansion of HFT strategies deemed "abusive" such as Quote Stuffing, Layering, Spoofing and Momentum Ignition	MiFID, MAD, MAD Implementing Directive for RMs And MTFs.	<ul style="list-style-type: none"> <li>• Potential inclusion of PING orders which could impact Liquidity Seeking strategies</li> </ul>

Source: TABB Group

The danger of creating a one-size-fits-all prescriptive approach does not allow for firms to adopt appropriate governance controls for their differing businesses. It is impossible for every asset class to be squeezed into the same market structure, and the categorisation of HFT is both confusing and contentious. In addition, there are still conflicting opinions on whether differentiated rules are necessary for Regulated Markets (RMs) and Multi Trading Facilities (MTFs). No single prescriptive answer will cover all asset classes, and the regulators will need to harmonise an agreed approach accordingly.

European regulators are currently faced with an unenviable task of operating within a national, regional and now international framework, with local and regional issues still to be played out. No two markets in Europe are the same, ensuring that whilst top-level guidelines may appear achievable, local nuances will challenge effective implementation. It would also appear that not all of the regulators see eye to eye. From the Swedes to the Italians, individual interpretations of what constitutes a free and fair market have very opposing views.

## The Spotlight on Energy

Given the vagaries among European regulators, there are those who remain skeptical of the practicalities of future regulatory proposals and recommended deadlines. They need look no further than the wholesale energy markets to see the full picture of regulatory change.

Whilst the spotlight has been on market surveillance in the equities markets, the focus is shifting. Regulation in the wholesale energy markets now has the potential to outpace the standard benchmarking of the investment banking sector. The Regulation on Energy Market Integrity and Transparency – 2010/0363 (COD) (REMIT) is possibly the most significant of the recent European regulations.

Until recently the wholesale energy markets were the least regulated of any financial market. By 2013 they will count amongst the most regulated. REMIT will extend the MAD framework to cover energy derivatives and emissions trading. Firms are required to register with their national regulator and to provide detailed transaction records to the European Agency for the Cooperation of Energy Regulators (ACER).

Whilst the initial scope of REMIT looks more or less standard fare for equities markets, this has to be placed in the regulatory context of the wholesale energy markets, providing a clear indication of how the regulators intend to target all financial instruments trading cross-border with the full backing of the G20.

As well as standard market regulation, there will also be an additional layer of regulation – the European Agency for the Cooperation of Energy Regulators (ACER). The Regional initiatives initially created seven electricity and three gas regions ahead of building a single energy market by 2014 in order to foster market integration cross-border.

ACER will have a view of the entire market and can more reliably detect abuse with a full data set; as such, ACER will be given the primary responsibility for market surveillance. This will set a firm intention by European regulators to create one single energy market by 2014, backed by regulators, institutions and politicians alike.

### The REMIT for Market Surveillance

Typically, energy brokers trade with a number of market participants over various exchanges globally, making it harder to detect market abuse. Having a regulator with a cross-border market overview will lead to challenges in both data provision and the management of that data to detect market abuse efficiently.

The biggest changes in the energy markets include:

- **All transactions and fundamental data will be reported to the new pan-European energy market supervisor ACER.** Data will be shared with other regulators, such as ESMA and national regulators. For a market that has traditionally verged on opaque, market participants now face full disclosure requirements which will bring wholesale technology and process changes.

- **The scope of "Insider Trading"** stretches beyond trading to include capacity of facilities for production, storage, consumption or transmission of electricity or natural gas. All of which are now prohibited as is **"market manipulation"**. This includes creating or removing orders, or sending false signals regarding the capacity, supply, or price of a wholesale energy product and dissemination of false/misleading information via the media or the Internet. How this will translate to algorithmic orders is not yet clear.
- Brokers now have to **notify national regulators without delay of any transaction** if they suspect rules prohibiting trading on inside information or market manipulation have been breached.

Given the volumes and cross-border nature of the energy markets, partially manual surveillance systems will be unable to cope with the new requirements. Tackling challenges **such as volume of alerts and "noise", ensuring the** data quality and the ability to identify the source and the validation of data in real time with time-stamp discrepancies will force significant technological change on the sector.

In addition, many of the standard compliance frameworks have yet to be fully established by energy market firms. Therefore, brokers who are able to demonstrate mandatory compliance training requirements and translate industry knowledge into system and process changes to improve the regulatory framework of wholesale energy markets will steal a march on shaping the future of the industry.

## The Challenges

The magnitude of data that firms have to sift through in an attempt to meet new legislative requirements looks set to increase substantially. European markets appear likely to follow the US, where a reputed 90% of message traffic is now comprised of comprises of cancel and replace orders. With disparate sources of data of varying quality, the challenge of collating data in one central source, whilst difficult, will be essential to meeting the new regulatory requirements.

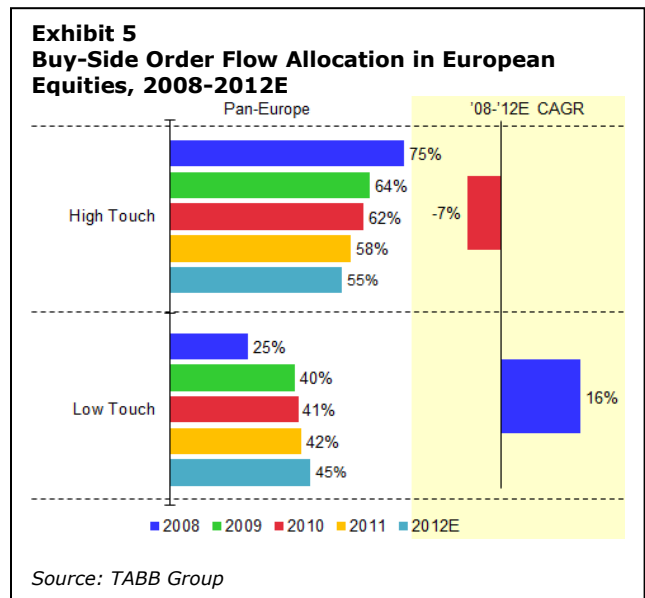
ESMA guidelines indicate that when trading in different asset classes on different platforms, it is *"important that investment firms take account of the interconnectedness of their trading"*<sup>3</sup>. Although this is should be considered **relative to a firm's exposure and trading activity**, the switch in regulatory approach from siloed regional responses to a cross-border holistic view of automated trading should not be underestimated.

### Changing Tack to Automation

TABB Group's recent 2011 European Equity Trading study shows that the buy-side march to automation is relentless.

Algorithmic trading will continue to dominate the future of trading in Europe, with low-touch execution increasing from 42% in 2011 to an estimated 45% in 2012 (see Exhibit 5). Whilst algorithms are acknowledged as a necessary tool with which to execute large trades in an increasingly fragmented marketplace, the regulators have growing concerns over **"stupid"** algorithms and other abuses which have the potential to distort prices and disrupt both trading and efficient price discovery. In **ESMA's view, even a "slow"** algorithm such a minimal participation passive strategy still has the potential to create havoc.

Therefore all market participants using algorithms will now have to provide regulators with full records as to strategies employed, system properties, testing methodologies and results, as well as undertake periodic reviews irrespective of whether they are an HFT prop shop or a buy-side investor<sup>4</sup>. Algorithmic strategies and their workings are often complex and IT intensive, and testing and monitoring can be both imperfect and costly. It is impossible to simulate how an algorithm will behave in stressed markets. Rigorous



<sup>3</sup> ESMA Final Report 2012, point 148, page 26

<sup>4</sup> ESMA Guideline 2.h

algorithmic testing can resemble looking for the proverbial needle in a haystack, and it becomes inordinately expensive in the absence of a fully flexible testing solution. If a firm's testing parameters cannot be changed on an ad-hoc basis, it runs the risk of being unable to test algorithms to satisfactory levels.

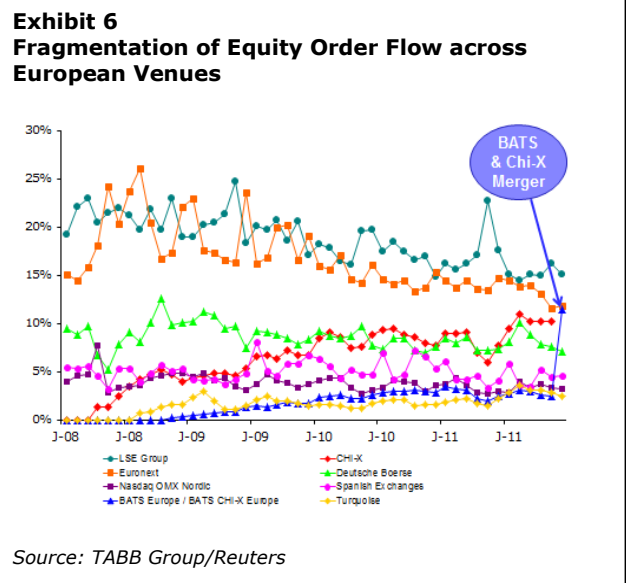
## The Data Dogma

As traditional surveillance techniques are clearly no longer sufficient to monitor automated trading, a new range of techniques is being developed to use prescriptive machine intelligence. Using static timeframes, and price and volume thresholds, current surveillance models are limited to detection of market abuse provided you know what you are looking for.

Given the growth in correlated trading – a pair of stocks, the derivative versus the underlying, or an index and its constituents – a one dimensional market surveillance limits a firm's capabilities. The market abuse may not take place on the same exchange, by the same trader or even the same broker. Surveillance now has to be focused on the anomalous outcome of the activity via a statistical approach that can spot changes in the strength, direction and duration of a trend in a stock price.

Therefore the challenge in collating data from disparate sources to place in a centralised location only magnifies. In-house, hosted, on-site, off-site or co-located, analysing data from market, trader and across a proliferation of venues to uncover any inappropriate activity raises critical issues. Incoming data is siloed and asynchronous, making the creation of a common model to view the firm holistically both essential yet seemingly impossible (see Exhibit 6).

There are non-electronic markets (such as voice) to be incorporated into electronic audit trails with miniscule time-stamp discrepancies. The growing inclusion of social media, together with the utilisation of real-time data alongside batch storage data and its potential overlays, create a myriad of complex decisions which now have to be interwoven on both a local and cross-border scale. Too many false negatives, where reports show a clean slate of activity, mean possible abuse is missed. Too many false positives, where hundreds of alerts are thrown up but include normal trading activity, waste valuable resources.



## Sniffing Out the Bad Apple

Any individual who wants to abuse the markets only has to spread orders across different brokers, products and borders to better hide malicious intentions. There is a limit to what

individual firms, exchanges and regulators can achieve independently; trades viewed in isolation may appear innocuous. But the regulators appear determined to fight back by becoming ever-more vigilant to market manipulation and insider trading cross-border, and by using a more aggressive approach to policing the markets. impossible (see Exhibit 6).

Recent high-profile cases show a focus on cross-border regulation, such as the FSA fining Greenlight Securities in excess of **€8.7 million** for market abuse, and Canadian day trading firm Swift Trade, **€9.6 million**<sup>5</sup> for alleged layering (see Exhibit 7). Both cases of market abuse were attributed to input from regulators in different jurisdictions. The public perception that national regulators are **"toothless" is being radically revised.** The FSA issued its first prosecution against insider trading in 2008. There have now been 11 convictions with 16 more cases being prosecuted.

#### Exhibit 7 Groundbreaking FSA Fines in 2011 and 2012

Date	Action	Detail
February 2012	US-based Hedge Fund	FSA imposed two € 4.3million fines for insider trading against both the individual and the firm – combined fine of €8.7 million
November 2011	Dubai-based Investor	Record fine of €7 million for market abuse, market manipulation and misleading investors
September 2011	Lithuania-based Hedge Fund	Hedge fund fined €2.4million for market manipulation and fictitious trading
June 2011	Individual	Self employed trader fined € 4.3million for manipulated prices on spread betting.
May 2011	Canadian based firm	FSA fined Canadian firm €9.6 million for manipulative trading – "layering"

Source: TABB Group

ESMA also now has the remit to target market abuse more aggressively by working with competent national authorities to share market surveillance and enforcement facilities. With the additional resources of the newly formed ESMA-Pol, the regulatory equivalent of Interpol, market manipulation and insider dealing will continue to be in the spotlight across Europe.

The regulators also look set to foster greater links internationally. And conversations with brokers engaged with ESMA outlined a focus on greater co-operation among market surveillance departments internally to provide a cross-border, cross-asset overview. Market surveillance information shared internally will be better able to detect, investigate and discipline market abuse ahead of order execution. The recent heavy fines from the FSA are providing all the necessary impetus for board members of forward-thinking investment firms to place regulatory compliance firmly at the top of their requirement list.

<sup>5</sup> Exchange rate of 1 GBP = 1.20034 EUR

## The Intricacies of Implementation

At a time when competitive differentiation is key and budgets are depleted, firms have to be **extremely clever about using what they have, incorporating new "Big Data" strategies and keeping the technology door open for future requirements.**

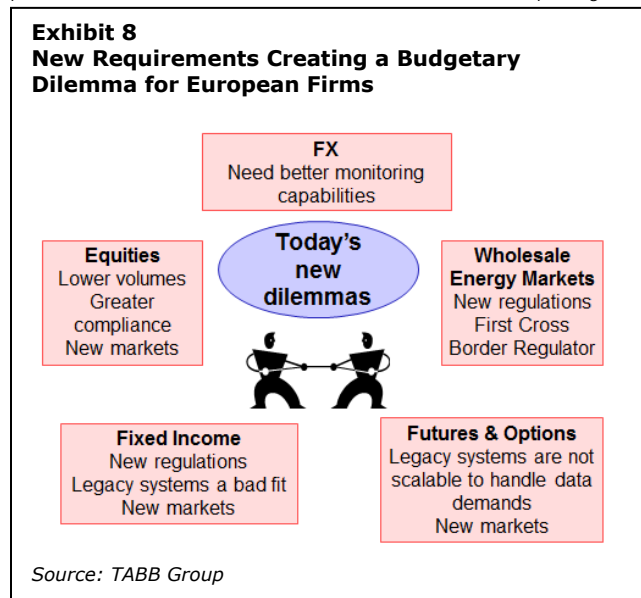
### The Fight for Resources

Different asset classes on different legacy systems generating different data in different formats is the equivalent of the world's largest spaghetti junction. Add in the new regulatory requirements across asset classes and interconnectedness of trading today and the gravity of the situation becomes apparent (see Exhibit 8).

The level of information required to assess all potential risks for an individual counterparty firm-wide, irrespective of the individual trading desk concerned is mammoth, from FX to corporate actions to sovereign downgrades. There are common issues such as data overload and collation, but drill down and each asset class or geography will have slight nuances which will impact implementation. What is required for transaction reporting in Fixed Income will differ for Equities. Equities settlement can be anything from T+0 to T+3, depending on the location or stock traded.

Even for the most vanilla of names, common issues such as source systems having like-for-like fields named differently means all the fields in each source system have to be identified, resorted, renamed and mapped to new fields required for transaction reporting. Counterparty and instrument static data also come in differing formats, making it difficult to aggregate to defined product classifications. Additional issues such as data retention, netting and the aggregation of trades make it harder to drill back down to the initial source to monitor potential market abuse or manipulation.

The consequences for a firm missing just one straight forward corporate action have the potential to be significant. Without full accurate details of the corporate action, amendments cannot be made to the data source and the requisite trade cannot be put through. If no trade hits the back office, the agent will not be able to instruct, leading to **incorrect reporting of a firm's exposure and potentially place the firm and their client at risk.** Multiply that one line of data for all data required across asset classes globally and the requirement for reliable, consistent data and its correct and timely analysis becomes painfully evident.



With large data volumes derived from multiple sources, differing data standards also have the potential to disrupt. Interrelated trading and news events taking place across the globe may also suffer from time synchronization inaccuracies. As these discrepancies can only be resolved by uniform implementation – which competing venues are unlikely to agree on – the need to create a system which can source data from multiple sources but also ring-fence potential trouble spots adds to the level of complexity required.

As well as any current data required, future information also has the potential to impact initial risk exposure. Without incorporating new risk parameters as and when they occur, risk management processes quickly become ineffective unless they are fully flexible, real-time and immediately accessible. All the issues above will only continue to evolve given the sheer volume of data automated trading has created.

## **Real Time is a Must**

Under the guidelines to promote fair and orderly trading, ESMA also highlights the need for real-time controls and surveillance. Similar to US legislation, ESMA refers to the requirement for real time but fails to state what exactly **constitutes "real time"**. **Rather**, ESMA says merely that all firms who engage in automated trading must be able to provide information to the relevant competent authorities regarding any significant risks that could **affect fair and orderly trading in "as close to real time as possible for possible signs of disorderly trading"**<sup>6</sup>.

Compliance officers who utilise surveillance systems with a limited number of fixed alerts are forced to focus attentions on flagged exceptions. **As one participant commented, "If we can say we have covered 85% of our trading activity, we are happy". Yet it will be the one trade in the 15% that will be the problem.** Without real-time risk management, individual firms run the risk of:

- Not having an accurate picture of the risk of the firm in markets where calm can turn to mayhem in a nanosecond;
- Severely limiting their capabilities because they must err on the side of caution rather than risk overstepping the boundaries;
- Incurring additional costs by not being responsive enough, such as not trading out of the position promptly;
- Providing inadequate protection for clients compared with competitors;
- Incurring heavy penalties from the relevant competent authority; and
- Falling foul of authorities and clients due to an inability to flag any erroneous trades to the authorities in a timely manner.

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<sup>6</sup> ESMA Final Guidelines, December 2011 – Guideline 2



As automated trading continues to increase, partially-automated systems will start to strain at the seams. Given the increasing number of orders and the speed at which these are traded, the optimum solution is for real-time order flow to be monitored in an automated solution to enable monitoring of all flow, successfully filter through the noise and highlight the detection of outliers in a faster, more efficient manner.

## The Essential Economics of Flexibility

At a time when most parts of budgets are waning, regulatory compliance is becoming a larger piece of the non-discretionary portion. TABB Group estimates that spending across Europe on surveillance programmes in equities and derivatives alone for brokers and trading venues will rise from €105 million in 2011 to €126 million by 2014, accelerating by 8% from 2012 as new regulations are implemented (see Exhibit 9).

Given the impact MiFID II is likely to have on fixed income markets, we anticipate this will only increase. Overlap amongst markets across assets, countries and continents means that those with holistic views of requirements can leverage global implementations yet must leave sufficient room for the nuances and details of individual surveillance programmes.

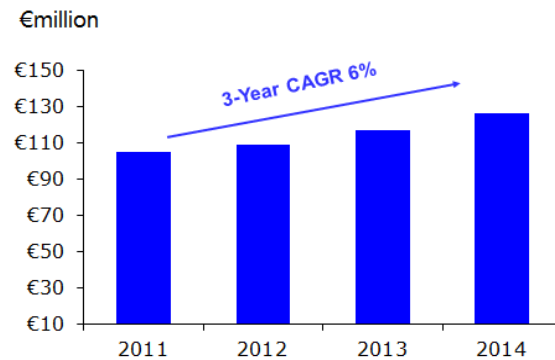
Likewise, regulators with cross-asset jurisdictions, and venues with cross-asset or cross-border trading platforms must tailor programmes to supply sufficient individual market depth as well as deal with the complexities of weaving cross-market views together. Every incremental move towards markets becoming more electronic increases the correlations amongst similar market structures and adds another dimension to the status quo. In addition, surveillance programs must keep up with the fastest market to be effective.

There is an overwhelming need for flexible and deployable systems that meet all of the above requirements as well as interact with legacy systems, incorporating the data they need and rejecting **the data they don't, on a case by case basis**. Flexible systems that can work with different regulators in different regions across different asset classes will resolve critical current implementation and scalability issues.

Market participants need to increase reporting and audit responsibilities, and are therefore looking at which processes and functions can be shifted externally. Effective risk management tools focus on where to align an organization and the disparate technology platforms to leverage existing systems to expand their reach and competitiveness.

In addition, market participants cannot only focus on the legislation required for current guidelines, but they have to recognise that the legislation is a moving target. Requirements will be tweaked as regulations are reviewed and updated, the speed of which only seems to be increasing. Firms need to ensure that they implement practices, systems and controls which are capable of adapting in this flexible environment without incurring undue expense or delay in implementation.

**Exhibit 9**  
**Spending on Equities and Derivatives**  
**Surveillance Programs in Europe, 2011-14**



Source: TABB Group

## Setting Sail for New Markets

Increased competition in a shrinking commission pool means that firms have to adapt to survive. The commoditisation in equities, coupled with a recession in Europe, has increased demand access to a growing number of global markets to improve fund performance (see Exhibit 10). New services and bundled offerings are created to retain existing clients and appeal to new ones, not only geographically but also across products.

Whilst new legislative requirements to provide descriptions of algorithms and trading strategies, along with proof of real-time surveillance feeds and provision of adequate risk controls, are in themselves not a huge leap if a firm is trading solely European equities, it will be essential for firms to implement not only technology that offers a competitive advantage but enables interdepartmental and regional process improvement.

As firms increasingly look to reinvent themselves and streamline internal procedures and processes to find economies of scale, conversations with market participants have shown that some organisations are substantially reviewing their approach to traditional market surveillance and risk analysis. They are creating holistic networks of operational risk to maximize benefits as well as mitigate risk more effectively.

Alongside internal politics and regional fiefdoms, the complexities of the systems necessary to meet this requirement are overwhelming. The main complaint is the difficulty in creating sufficient standardisation of data definitions, to enable consistent and efficient aggregation of risk monitoring across all business units globally. However, those engaged in this **process are benefiting from the ability to see a firm's exposure to specific counterparties** worldwide. A complex network of operational risk offers unlimited business opportunity potential at a time when brokers are struggling to differentiate products and services profitably.

**Exhibit 10**  
**Equity Market Performance in BRICS & Emerging Markets, 2003-11**

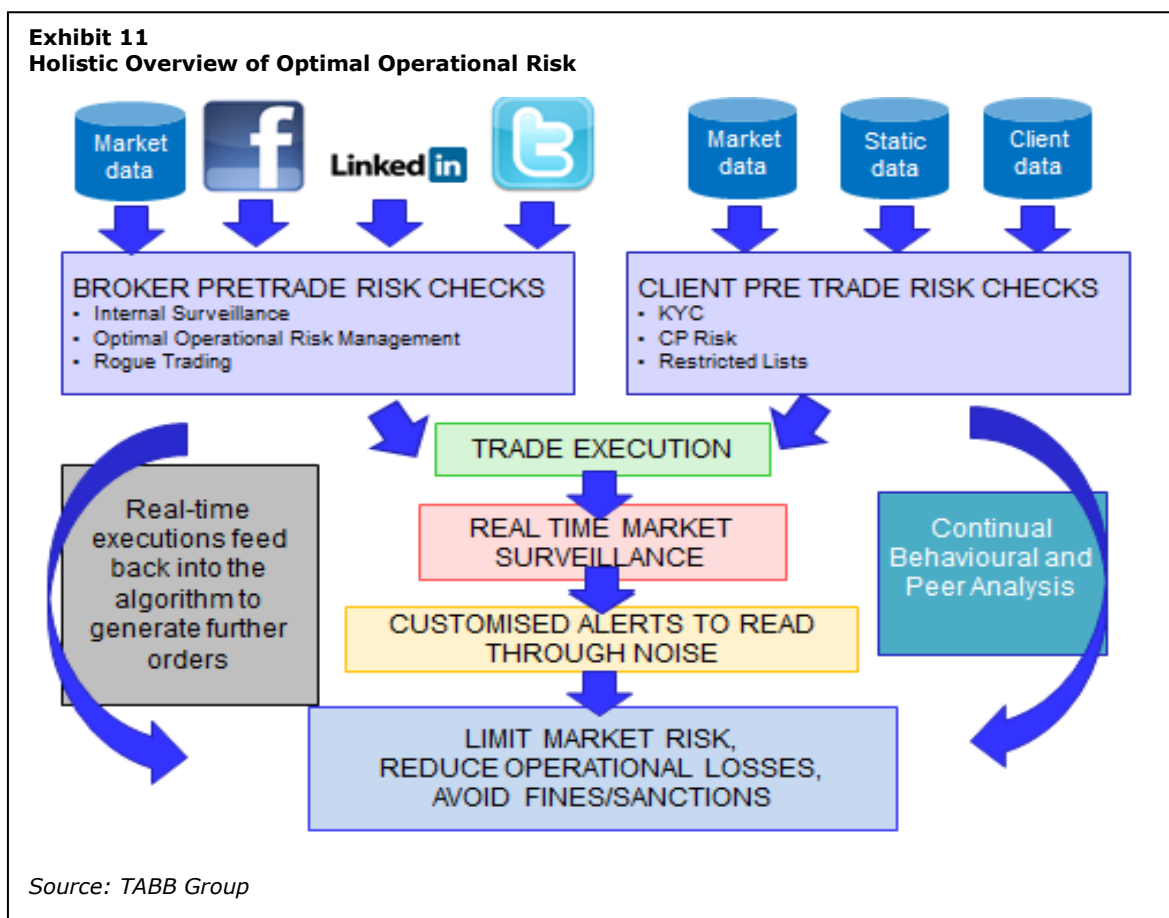


Source: TABB Group

## Learning to Leverage Uncharted Territory

Those who are able to re-invent regulatory necessity as a business opportunity will be those who emerge victorious from the onslaught of European legislation.

As more products are being forced to trade electronically, new technological demands will ensure greater evolution in the world of algorithms, smart order routers (SORs) and venue analysis, demanding yet more data and analytics. Given that most market participants are already straining under budgetary constraints, new options need to be explored to ensure that development maintains its natural pace without being unnecessarily curtailed or stuttering to a definitive halt under the weight of data requirements.



The latest market surveillance tools and technology also offer new, less-evident benefits. Surveillance is morphing into a trading monitoring tool that not only mitigates risks but also offers business opportunities at the next level by incorporating behavioural profiling and peer group analysis. Providing all this information real-time using desk top visualisation tools which profile individual trader activity, is putting necessary and business-critical back office tools into the front office, offering a wealth of new business opportunities in terms of behavioural profiling and peer group analysis real-time (see Exhibit 11).

## Stupid vs. Intelligent Algorithms

Given the current disparate nature of European liquidity, algorithmic strategies must evolve into the next generation of intelligent "sensing" algorithms relying on venue analysis and SORs to correct and tweak their behaviour. Greater innovation in reading the market ahead of sending the order will allow participants to improve their quoting behaviour in order to avoid charges as well as seek out necessary liquidity across an increasing number of venues. New and effective market surveillance tools offer a solution in the form of a centralised source of intelligence in a visual format to allow for rapid response to changing fundamentals in the marketplace.

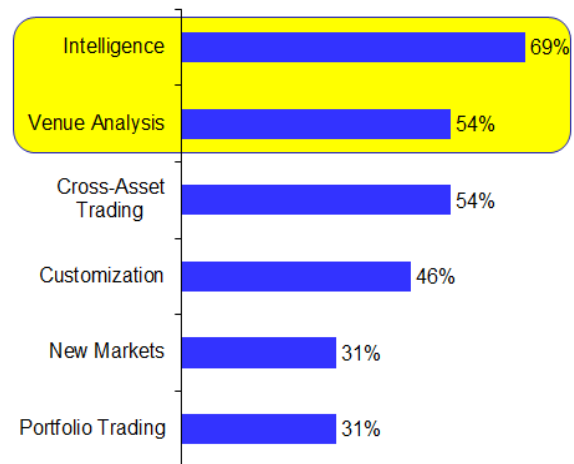
As trade execution and trade signaling algorithms become not only cross-border cross-asset, but extend to portfolio management and automatic hedging within the trade cycle, the ability for algorithms to act decisively rather than merely fish for flow in dark pools will become ever more critical.

In recent research by TABB Group, 69% of European sell-side brokers interviewed see greater intelligence as the main focus for algorithmic development in 2012, with 54% focusing on venue analysis and cross-asset trading (see Exhibit 12). As developments on exchanges and venues unfold, a split between those who seek to attract or discourage HFT flow by either rebating or penalizing order flow, will force further technological development **on algorithms. If orders are no longer able to be sent to "test" the market, smarter algorithms will need to be able to read the market information available far more accurately.**

Faster and more sophisticated awareness also allows for the mitigation of market abuse by predatory traders before it causes significant damage. Without real-time monitoring, traders that access markets directly via their broker's membership, could, for instance, use two different brokers to act as the conduit for a pair of strategies that interact with each other to gain an advantage from the market. With the strategy split up between two member IDs and without adequate surveillance, nobody would realise.

Whilst cognisant of the potential risk they pose to the overall functioning of financial markets globally, many market participants do not yet have the capability to monitor all markets globally real-time, choosing to remain regionally siloed. Yet with further regulation comes greater opportunity. The potential for the firm to monitor all order flow for market abuse and disorderly trading – real-time, cross-asset and cross-border – will offer the greatest risk-reward ratio through effective management.

**Exhibit 12**  
**Brokers Focus on Algorithmic Developments 2012**



Source: TABB Group

As business leaders are starting to realize that they need to develop methods to re-use and recycle, there is now a business case as well as a regulatory case for market surveillance technology. Surveillance is morphing into a trade monitoring tool that not only mitigates risk but also offers tangible business opportunities from optimal operational control to enhanced performance analysis.

## Conclusion

Market participants need to stay alert to the dangers of becoming lethargic over the plethora of European regulations. Whilst the majority may believe they are fully compliant **with ESMA's guidelines for equities, the cross-asset, cross-border nature of this and future legislation leaves many with much work still to do.**

The regulators have reloaded the starting gun. Those who believe they have all the time in the world need only to look at developments within the wholesale energy markets to witness the regulators' intentions.

Whatever the outcome of future regulation, one fact remains certain. The significant overload of data which firms will have to manage will only increase. As yet more trading is forced out of the opaque shadows of the OTC world by the regulators and onto exchanges, new approaches to trading will require space-age technology to monitor the continued deluge of data from high-speed trading.

Yet it is the correct analysis of exponential automated flow which will provide the solution. If you have limited resources, focusing your aim in the right direction will be the difference between winning and losing, catching the bad guys or over penalizing the good. As well as the concerns over reputational risks, financial firms no longer have the capacity to dilute financial losses. Remaining alert is critical to survival.

The sophisticated architecture now required to pull data together from disparate sources and translate this into a synchronized valuable resource real-time not only allows firms to efficiently mitigate risk both internally and externally, but also offers a world of new possibilities.

Market surveillance has now morphed into optimal operational control; anomaly detectors no longer look for layering and spoofing, but track predictive behaviours and patterns in advance across an increasingly fragmented marketplace. Critical back-office tools have moved onto traders' desks in the front office to ensure efficient trading at a time when every euro saved **matters to a fund's** overall performance. More interlinked and effective risk models lead to a broker's ability to offer efficient and competitive pricing and economies of scale on a firm-wide basis.

Market surveillance incorporated into automated trading will create the ultimate execution performance algorithms which act decisively rather than merely fishing for flow and leaking critical market intelligence. As venue analysis and SORs lead the way to improved execution performance, advancements in monitoring predictive behaviour to source quality liquidity will be welcomed by the buy side and sell side alike. As social media becomes further entrenched into trading patterns and portfolio management, the technology takeover is heading for virgin uncharted territory. And with advancements in encryption leading to further options on the cloud, the possibilities are seemingly limitless from the global bulge bracket to the small prop shop.

The main constraints will be strained IT resources operating legacy in-house systems that have evolved in a sporadic fashion over a number of years. With Brussels regulation focused on pre-transactional activity, a firm's ability to adapt and change capabilities to accommodate these amendments to legislation will be critical. Flexible and adaptable systems that can slip in amongst the cogs and join up the dots to complete the true picture will offer opportunity for individual market participants to streak ahead.

Those who choose to ignore the warning signs may very well be left at the starting line.



## About

### TABB Group

TABB Group is a financial markets research and strategic advisory firm focused exclusively on capital markets. Founded in 2003 and based on the methodology of *first-person knowledge*, TABB Group analyses and quantifies the investing value chain from the fiduciary, investment manager, broker, exchange and custodian. Our goal is to help senior business leaders gain a truer understanding of financial markets issues and trends so they can grow their business. TABB Group members are regularly cited in the press and speak at industry conferences. For more information about TABB Group, go to [www.tabbgroup.com](http://www.tabbgroup.com).

### The Author

#### Rebecca Healey

Rebecca joined TABB Group in March 2011, bringing more than 15 years' experience in e-trading and financial services. Rebecca has held various sales and trading positions with Bankers Trust, Goldman Sachs, and most recently Credit Suisse, where as Vice President she was instrumental in launching the successful AES product to hedge funds from its inception in 2002 until 2008. Prior to this she was the first electronic trader at Credit Suisse to be registered for all electronic European cash equity markets and covered sales trading into Asia and then Europe between 1997 and 2000. More recently, Rebecca was based in the Middle East from 2008 to 2010. There she was employed by the British Embassy in Bahrain where she successfully launched **the UK Government's financial services strategy** and set up the Bahrain Financial Services Roundtable, which remains a key source of information for the UK Government today, especially in relation to Islamic finance. Rebecca holds a Bachelor of Arts degree in Spanish & Latin American History & Politics from the University of London. At TABB Group, Rebecca has authored *European Equity Trading 2011/12: Looking for Allies in the Face of Adversity*, *European Algorithms: The Evolution and Trading in the Middle East: Looking for Mecca*.



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