



Scott C. Goebel
Senior Vice President
General Counsel
FMR Co.

82 Devonshire Street V10E, Boston, MA 02109-3614
617.563.0371 FAX 617.385.1331 SCOTT.GOEBEL@FMR.COM

October 23, 2012

Ms. Elizabeth M. Murphy
Secretary
Securities and Exchange Commission
100 F Street, NE
Washington, DC 20549-1090

Re: File No. 4-652; SEC Technology and Trading Roundtable

Dear Ms. Murphy:

Fidelity Investments¹ ("Fidelity") appreciates the opportunity to comment on issues discussed at the Securities and Exchange Commission's ("SEC" or "Commission") October 2nd, 2012 roundtable titled "Technology and Trading: Promoting Stability in Today's Markets."² Fidelity is one of the world's largest providers of financial services, with approximately \$3.7 trillion in assets under management and administration, more than \$780 billion of which is managed equities.

Fidelity supports the Commission's goal of promoting stability and investor confidence in markets that rely on highly automated systems. Our comments, which reflect the views of a diversified financial services company, focus on how market participants can respond to errors and malfunctions and manage crises in real-time. Specifically, we discuss why existing market mechanisms to prevent or mitigate errors are comprehensive, but may not be sufficient; suggest a role for increased venue-based test environments and controls; and request that the Commission to take a deliberative approach to extending existing SEC policies to additional market participants.

¹ Fidelity provides investment management, retirement planning, portfolio guidance, brokerage, benefits outsourcing and many other financial products and services to more than 20 million individuals and institutions, as well as through 5,000 financial intermediary firms. Comments reflected in this letter represent the views of Fidelity Management and Research Co., investment adviser to the Fidelity family of mutual funds, Fidelity Capital Markets ("FCM"), Fidelity's institutional trading division of Fidelity that provides trading, products and services to the retail and institutional clients of Fidelity's brokerage businesses, as well as the views of a financial services provider representing millions of retail investors saving to secure their financial futures.

² Technology and Trading Roundtable, 77 Fed. Reg. 56697 (Sept. 13, 2012), *available at* <http://www.gpo.gov/fdsys/pkg/FR-2012-09-13/pdf/2012-22561.pdf>

Existing market mechanisms to prevent or mitigate errors are comprehensive, but may not be sufficient.

Over the past decade, the U.S. equity markets have been shaped by changes in technology and regulation. Technological enhancements have improved the speed and efficiency of the markets, fostered competition, and provided access to new and diverse sources of liquidity. Retail and institutional investors have benefitted from lower spreads and execution costs. Firms have used variety of mechanisms to help monitor for unforeseen problems with technology and help mitigate trading errors. Some of these mechanisms are required by regulation³ and others are a part of a firm's standard risk mitigation processes.

For example, to help avoid trading errors, many firms employ industry best practices in designing and testing new software and hardware changes before they are implemented and deployed in market facing systems. These best practices include, among other items, using different forms of testing, such as user testing and integration testing. To help mitigate any trading errors that do occur, many firms use a variety of real-time monitoring and alerts. For example, "in-line" monitoring alters system functions and takes action as soon as a problem is detected, while independent risk management tools allow firms to apply more comprehensive tests across trading systems. At Fidelity, FCM uses various types of technologies to allow for real-time identification of issues and intervention of potential erroneous activity. These technologies include:

- logic built directly into the mainline trading applications to identify various erroneous conditions;
- high performance "listeners" that collect real-time streaming data and apply rule sets to detect abnormal behavior and generate alerts; and
- multi-time zone, multi-country, 24 x 7 global trading "war rooms" to help identify issues in trading real-time. These war rooms provide such features as crisis management for incidents impacting trading systems, application monitoring, order entry support, transaction routing, market event and volatility monitoring, coordination of market open/close coverage with capacity and managing volume action plan conditions for trading systems.

³ For example, under the SEC's Market Access Rule (Rule 15c3-5 under the Securities Exchange Act of 1934) broker-dealers with access to trading securities directly on an exchange or ATS are required, among other items, to establish, document, and maintain a system of risk management controls and supervisory procedures that are reasonably designed to systemically limit the financial exposure of the broker-dealer that could arise as a result of market access, and ensure compliance with all regulatory requirements that are applicable in connection with market access. Broker-dealers also have obligations under FINRA Rules (i.e. FINRA Rule 3130) that require the firm to annually certify that they have in place processes to establish, maintain and review policies and procedures reasonably designed to achieve compliance with applicable FINRA rules, MSRB rules and federal securities laws and regulations. Firms are also required to modify such policies and procedures and test their effectiveness on a periodic basis.

Unfortunately, errors are inevitable even with the best tested and monitored systems. For this reason, we believe that further discussions on software and testing at the firm level should also contemplate an expansion of venue-based test environments and a framework for venue-based safeguards.

A role for independent real-time monitoring or filtering by other parties.

Today, equity market venues perform a limited amount of monitoring or filtering of participant activities. We believe that the lack of more extensive venue-based monitoring in the equities markets is a gap in the market's "safety net" that should be addressed. Given their place in the market, venue-based controls can offer a better control mechanism for risk mitigation than other potential controls; thus, we support enhanced, venue-based independent real-time monitoring and filtering.

Changes to venue-based monitoring and filtering could take several forms. We would support proposals to expand the number of venues that have dynamic test environments for firm software updates and changes. Venue-based test environments allow firms to test coding changes fully in real life market simulations and help ensure that those coding changes do not negatively impact algorithms and systems infrastructures before they are used in public. We also believe that venues should provide checks for duplicate order IDs as well as "rogue order" tests based on historical volume/message statistics.

We would also be interested in further discussion with the Commission and others in the industry on venue-based safeguards, including so-called "kill switches." These venue-based controls might provide firms and venues with the ability to "shut off" orders from a broker-dealer or individual trading firm if trading by that broker-dealer or firm reached pre-set limits. In addition to firm level controls, each exchange and ATS might implement a series of safeguards and kill switches that could be structured as a secondary layer to catch failures that are not caught at the firm level. Fidelity believes that there is no single kill switch that is good for all market participants and encourages the Commission to work with the industry on metrics appropriate for kill switches. We also believe that such safeguards, if imposed, should be structured thoughtfully, in a manner that provides compensating controls to participant firms to allow valid trading in the event of an erroneous triggering of a kill switch.

For maximum effectiveness, the SEC might also examine coordinating controls across venues. One could envision a case where the aberrant behavior of a given firm might be spread across multiple venues and might not trigger a single venue's kill switch/warning mechanisms. Coordinating controls across venues might help to mitigate such an issue. We also believe that a discussion of venue-based safeguards should also include a discussion of communications to market participants to ensure timely and accurate updates around the use of a kill switch/warning.⁴

⁴ Fidelity believes that it would be appropriate for kill switches to be automated, as long as firms receive early warning messages to alert them to issues prior to automatic responses being implemented. Moreover, we believe

We fully appreciate the potential market implications for increasing venue-based controls. Such implications include, among others, the impact of false positives on order/execution flows that could negatively impact both the market and investor perception of the market and the fact that as controls become more complex, they risk becoming a destabilizing rather than a stabilizing force in the market. The imposition of additional tests and filters may also slow access to the markets. Fidelity believes that if additional filters are applied carefully and deliberately, false positives can be mitigated and any delays will be measured in milliseconds, particularly if tests are implemented in an “in-line” structure. Because any change to market structure has implications for the market as well as how investors view the market, Fidelity urges the SEC to maintain a dialogue with the industry to avoid any unintended consequences for these complicated policy decisions.

SEC’s Automation Review Policy.

We are aware of on-going discussions concerning the possible extension of the SEC’s Automation Review Policy (ARP) to include additional market participants.⁵ The SEC published ARP as a policy statement in 1989, largely in response to the 1987 market crash. Noting the impact that systems failures could have on public investors, broker-dealer risk exposure and market efficiency, the Commission expressed its view that the self-regulatory organizations (“SROs”), on a voluntary basis, “should establish comprehensive planning and assessment programs to test systems capacity and vulnerability.” Among other items, this first policy statement also expressed the view that an SRO should obtain an annual, independent review of its automated systems.⁶

Given the importance of SROs in the trading process, particularly the exchanges, we believe that, prior to extending the program to other market participants, the SEC should first update and formalize the ARP program. If the program is extended to additional market participants beyond SROs, given the complexity and frequent changes to firm software systems, we do not believe that requiring broker-dealers to submit certain information for independent review, such as their algorithmic code changes, is an efficient process for firms or the SEC to undertake, nor an effective way to promote investor confidence and market efficiency. Instead, we believe that a layered approach, including firm controls and venue-based controls, offers a more effective mechanism for market participants to respond to errors and malfunctions and manage crisis in real time. We look forward to further discussions with the Commission and industry on these topics.

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that automated kill switches should be implemented in a way that permits human intervention to turn off kill switches manually, if needed.

⁵ Policy Statement: Automated Systems of Self-Regulatory Organizations. Securities and Exchange Commission Release No. 34-27445 (1989).

⁶ Id.

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We thank the Commission for considering our comments. Please contact me should you have any questions concerning this letter.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "Scott C. Ashel". The signature is fluid and cursive, with the first name "Scott" and last name "Ashel" clearly legible.

cc: Honorable Mary L. Schapiro, SEC Chairman
Honorable Elise B. Walter, SEC Commissioner
Honorable Luis A. Aguilar, SEC Commissioner
Honorable Troy A. Paredes, SEC Commissioner
Honorable Daniel M. Gallagher, SEC Commissioner

Mr. Robert Cook, Director, Division of Trading and Markets
Mr. Gregg Berman, Associate Director, Division of Trading and Markets
Mr. James R. Burns, Deputy Director, Division of Trading and Markets
Mr. David Shillman, Associate Director, Division of Trading and Markets