



November 13, 2015

Mr. Brent J. Fields
Secretary
U.S. Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549-1090

Re: Investor's Exchange LLC Form 1 Application (Release No. 34-75925; File No. 10-222)

Dear Mr. Fields:

Investors' Exchange LLC ("IEX" or the "Exchange")¹ is pleased to respond to the comments submitted by various market participants on IEX's Form 1 application for registration as a national securities exchange (the "Application").² In our market design and our product philosophy IEX has consistently aimed to be a fair, simple, and transparent trading venue that thoughtfully balances the needs of investors, brokers, and market makers. With that aim, we are extremely pleased with and grateful for the favorable comments that have been sent to the Commission on our Form 1 from asset managers representing over \$1 trillion in equity assets,³ several prominent agency broker dealers, retail investors, academics, notable industry experts, and a leading technology-enabled market-maker and global liquidity provider.⁴ We are truly humbled to be supported by such a diverse cross section of our industry and the broader public.

¹ For purposes of this letter, depending on the context, IEX refers to the entity applying for exchange registration and/or the entity that currently conducts business as an alternative trading system.

² See Exchange Act Release No. 75925 (September 15, 2015).

³ See Letter to Brent Fields, Secretary, SEC, from Timothy D. Armour, Chairman, The Capital Group Companies (September 29, 2015) ("TCG Letter"); Letter from Krishna Memani, George R. Evans, Keith Spencer, and John Boydell, OppenheimerFunds, Inc. (November 5, 2015) ("Oppenheimer Letter"); Letter to Brent J. Fields, Secretary, SEC from O. Mason Hawkins, CFA, Chairman and CEO, et. al, Southeastern Asset Management, Inc., joined by Adelante Capital Management, Ariel Investments LLC, Becker Capital Management, Inc., The Boston Company Asset Management LLC, Brandes Investment Partners, Franklin Templeton Investments, Glenmede Investment Management, Greenlight Capital, Inc., Oaktree Capital Management, Pershing Square Capital Management, L.P., Sands Capital Management, Seawolf Capital LLC, Southern Sun Asset Management, and Teacher Retirement System of Texas (September 30, 2015) ("Southeastern Letter").

⁴ All comment letters are available at <https://www.sec.gov/comments/10-222/10-222.shtml>.



IEX would also like to take this opportunity to respond to three comment letters from BATS Global Markets, Inc. (“BATS”),⁵ Citadel LLC (“Citadel”),⁶ and the FIA Principal Traders Group (“PTG”).⁷ We will respond separately to any material comments that were submitted after the comment deadline of November 6, 2015.

As more fully discussed herein, the letters specifically cited above focus on two general aspects of IEX’s operation.

1. IEX’s so-called “speed bump,” whereby all access to the trading system is provided from a point-of-presence of the Exchange. The design of IEX’s point-of-presence is intended to protect orders entrusted to IEX from systemic inefficiencies which unfairly advantage certain speed-based strategies (which will be referred to as “latency arbitrage”). This is accomplished by providing all access participants with 350 microseconds of latency between the IEX point-of-presence in Secaucus and the IEX trading system in Weehawken, as described in further detail below.⁸
2. IEX’s routing broker (the “Router”) to be operated as a facility, as defined in Section 3(a)(2) of the Securities Exchange Act of 1934, of the Exchange. All routing instructions to away venues in connection with routable orders will be routed by IEX Services LLC (“IEXS”), an IEX affiliated broker-dealer, exclusively pursuant to Exchange instructions.

In addition, the Citadel and PTG letters both raise points with regard to the operation of certain non-displayed “pegged” order types offered by IEX.

Introduction

As described in detail below, we believe that the following key points are relevant to the Commission’s consideration of the Application:

- IEX’s “speed bump” is a simple, fair, and transparent means of providing access to the exchange that is narrowly tailored to protect investors from systemic inefficiencies. The ability of users to access IEX’s quotations will be comparable to that provided by other exchanges. In contrast to other exchanges, IEX’s model is offered as an alternative to their conflicted practices of selling access and technology.
- IEX’s quotations will qualify as automated within both the letter and spirit of Regulation NMS.

⁵ See Letter to Brent Fields, Secretary, SEC, from Eric Swanson, EVP and General Counsel, BATS (November 3, 2015) (“BATS Letter”).

⁶ See Letter to Brent Fields, Secretary, SEC, from John C. Nagel, Sr. Deputy General Counsel, Citadel (November 6, 2015) (“Citadel Letter”).

⁷ See Letter to Brent J. Fields, Secretary, SEC, Mary Ann Burns, Chief Operating Officer, PTG (November 6, 2015) (“PTG Letter”).

⁸ See Addendum F-14, Connectivity Manual, of the Investors’ Exchange LLC Form 1, [available at](http://www.sec.gov/rules/other/2015/investors-exchange-form-1-exhibits-f.pdf) <http://www.sec.gov/rules/other/2015/investors-exchange-form-1-exhibits-f.pdf>.



- IEX’s routing function is consistent with that offered by other exchanges and will not unfairly discriminate against broker-dealers or customers.
- Although there are many important issues relating to speed of trading, quoting and data transmission that are worthy of consideration, the sole question posed by the Application is whether it meets the standards of Section 6 of the Securities Exchange Act of 1934 (“Exchange Act”). Within that question lies another question: **Is there room in the national market system for an exchange to adopt any means, however narrowly drawn, to counteract the more pernicious aspects of speed-based trading?**

We address each of the points raised by the comment letters, in turn, below. But first, we believe it would be helpful to generally describe the operation of the IEX POP (as described below) and which functionality of the Exchange will, and will not, traverse the IEX POP.

What is IEX’s POP and why does it create a fairer market for participants?

All members of the Exchange must connect at IEX’s point-of-presence in Secaucus. Furthermore, each message submitted by a member must traverse coiled optical fiber before it travels the physical distance to Weehawken, where it is accepted by IEX’s trading system. Similarly, order execution reports and outbound proprietary market data messages traverse coiled optical fiber after leaving the IEX trading system. The length of the coil is equivalent to a prescribed physical distance of 61,265 meters (~38.07 miles), which combined with the physical distance to reach the trading system, equates to approximately 350 microseconds of latency, and is referred to as the “POP”. The POP is a simple and fair way to manage the interaction of orders on the Exchange that is “deterministic” in that it applies equally to each participant. There is no way for any IEX participant to pay for faster access or circumvent the POP.

This design is not dissimilar to the coiled cable, provided by the New York Stock Exchange (“NYSE”), The NASDAQ Stock Market (“Nasdaq”), and BATS families of exchanges in their respective data centers. Those exchanges, however, coil cable within their data centers specifically to create equivalent latency for participants who have paid for the privilege of co-location. For example, Robert Greifeld, Chief Executive Officer of Nasdaq OMX, specifically references Nasdaq’s “delay coil” in remarks he made at the Nasdaq OMX Group, Inc.’s 2014 Investor Day, noting that:

“...in our data center, we call it a **delay coil**. So this is a – we took it out of the data center last night. If you’re 31 meters away from the matching engine, all right, you have this length of delay coil, right. And again, each foot is a billionth of a second differential. If you are – now this is if you’re closer, you have a longer **delay coil**.” (emphasis added)⁹

In addition, the various NYSE, Nasdaq, and BATS exchanges offer varying connectivity options within their data centers that provide different latencies depending on the type of connection purchased.¹⁰

⁹ See, <http://files.shareholder.com/downloads/NDAQ/758668008x0x740452/7918EF32-2541-4F6F-9144-EDC02228351B/NDAQ.20140327.pdf>.

¹⁰ See, e.g., Exchange Act Release No. 34-76369 (SR-NYSE-2015-054) (November 5, 2015); and Exchange Act Release No. 34-70129 (SR-NASDAQ-2013-099) (August 7, 2013). See also, BATS Announces Availability of



Moreover, these exchanges additionally offer their customers point-of-presence connectivity options outside of their primary data centers, creating yet another tier of access.

IEX's coiling is structurally similar, but is a longer length of cable in an attempt to create fairness for *all* participants. In this way, the POP was designed as an alternative to the multi-tiered access system created by exchanges to sell faster market data, connectivity, technology, and co-location for high fees to firms who can take advantage of microsecond speed advantages in the existing market structure. The POP is provided as a service to all IEX users uniformly and involves approximately 350 millionths of a second of latency for all inbound orders and outbound messages to members and proprietary market data customers to ensure that no market participants can take action on IEX in reaction to changes in market prices before IEX is aware of the same price changes on behalf of all IEX members.

In conjunction with the POP, IEX aggregates the fastest available proprietary data feeds from each of the exchanges in order to update its own understanding of current market prices as quickly as possible. The POP was thus designed to protect against investor harm from latency arbitrage that is enabled when a participant on a particular trading venue, with preferential co-location access, is able to observe quickly price changes on that venue, and race to execute an order on another trading venue before those price changes are communicated to the other trading venue's systems.

All incoming orders to the Exchange will go through the POP. Likewise, any report of a transaction or other system message back to a user, including through IEX's proprietary data feed, must traverse the same length of optical fiber before it is received. However, outbound transaction and quote messages do *not* traverse the POP before they are sent to a securities information processor ("SIP"). IEX believes this distribution of data creates the greatest parity across IEX market participants, as well as greater parity between IEX's proprietary TOPS feed and the SIP, and materially reduces the ability of one IEX participant to unfairly trade to the detriment of another. Orders routed to away trading centers do not traverse the POP. Reports resulting from routed orders do not traverse the POP when received by the Exchange, but do so when they are communicated to members.

The POP provides an important choice for many market participants who cannot afford to, or have no need to, pay for low-latency connectivity, technology, and market data sold directly by exchanges for millions of dollars per year. Instead of participating in this "arms race" of technology, a market participant can choose to rest an order on IEX and utilize the technology we have designed to deliver the fairest and most up to date prices available. Similarly, the POP enables a market participant to safely send an order concurrently to IEX and other trading venues, without the risk that the order execution on IEX will provide a signal to market participants engaged in latency arbitrage who can then cancel their quotes on other trading venues to avoid execution.

Connectivity to EDGA/EDGX Certification Ports in NY5 Effective June 2, 2014, [available at](http://cdn.batstrading.com/resources/release_notes/2014/BATS-Announces-Availability-of-Connectivity-to-EDGA-EDGX-Certification-Ports-in-NY5-Effective-June-2-2014.pdf) http://cdn.batstrading.com/resources/release_notes/2014/BATS-Announces-Availability-of-Connectivity-to-EDGA-EDGX-Certification-Ports-in-NY5-Effective-June-2-2014.pdf; Nasdaq's Low Latency Connectivity, [available at](https://www.nasdaqtrader.com/content/Productsservices/trading/CoLo/LowLatencyFS.pdf) <https://www.nasdaqtrader.com/content/Productsservices/trading/CoLo/LowLatencyFS.pdf>.



Finally, we believe that the IEX POP promotes the goals of investor protection and fair, transparent and efficient markets, and fully aligns with the letter and spirit of the Securities Exchange Act of 1934 (“Exchange Act”) and Regulation NMS, as more fully detailed below.

Regulation NMS and Protected Quote Status

IEX Quotes Qualify as “Automated Quotations” Under Regulation NMS

The three comment letters to different degrees question the ability of IEX displayed quotes to be considered “automated quotations” and therefore entitled to trade-through protection under Rule 611 of Regulation NMS. In general, the requirement for automated quotations buttresses the prohibition on trade-throughs in Rule 611 of Regulation NMS by providing reasonable assurance that orders sent to execute against protected quotes can access them. Rule 600(b)(3) of Regulation NMS defines “automated quotation” to mean, in relevant part, a displayed quotation by a trading center that permits an incoming order to be designated as immediate or cancel (“IOC”), immediately and automatically executes an IOC order against the quotation up to its full displayed size, and immediately and automatically displays updates to the quotation to reflect changes to its terms.¹¹

BATS cites to one passage in the Regulation NMS Adopting Release,¹² concerning the use of “immediate” as applied to automated quotations, stating that the term would preclude “any coding of automated systems or other type of intentional device that would delay the action taken with respect to a quotation.” BATS goes on to say that, in light of the evolution of the markets in the 10 years since the adoption of Regulation NMS, it supports reconsideration of what it means to be an “automated quotation” and that, in the context of approving the Application, the Commission should “articulate clear standards” concerning this issue.¹³ Citadel and PTG also point to the same language in the Adopting Release. Citadel further points to a withdrawn Nasdaq OMX PSX proposal that would have imposed a delay on liquidity taking orders and additional “speed bump” proposals by two Canadian exchanges. Citadel also makes the assertion that the POP intentionally and selectively adds a “deliberate latency” and thus constitutes an “intentional device” that disqualifies IEX quotes as “automated quotations” under Regulation NMS.

In connection with this issue, it is important to consider the nature of the POP, separately and in comparison to existing market practice, other relevant provisions of Regulation NMS, and relevant statements by the Commission when it adopted the regulation.

First, as noted above, the POP represents a form of prescribed physical distance to which all users are subject when submitting orders to IEX’s trading system. In this sense, it is no different from means that all exchanges impose to set the terms by which users can connect to their systems, either at a location separate from their matching engines, or through co-location arrangements in facilities where those matching engines are housed. Indeed, as noted above, exchanges that offer co-location adjust the

¹¹ 17 CFR § 242.600(b)(3).

¹² Regulation NMS, Exchange Act Release No. 51808 (June 9, 2005), 70 Fed. Reg. 37496, 37534 (June 29, 2005) (“Adopting Release”).

¹³ BATS Letter at 3.



length of coil within their data centers to regulate the distance between users' systems and the exchange's systems, in an attempt to create equal latency among a subset of paying members.

Further, the amount of the latency imposed by the POP is less than or not materially different than that currently involved in reaching various exchanges based on geographic factors. As one example, users wishing to trade in Tape B and Tape C securities from the Chicago Stock Exchange's Secaucus data center must physically traverse the distance between Secaucus and Chicago to arrive at that exchange's trading system in Chicago (a distance more than 20 times greater than that imposed by the POP).

In its letter, BATS acknowledges that some existing exchanges have latencies in excess of the length of the POP. And as Healthy Markets, a non-profit coalition of asset managers, pointed out in its comment letter: "The NBBO already includes quotes with varied degrees of time lag. The IEX cable distance of 38 miles is far less than the distances between NY and Chicago, and is remarkably similar to the distance between data centers in Carteret and Mahwah (36 miles). In our view, excluding IEX quotes from the NBBO based on its time delay would be to suggest that all exchanges providing inputs into the NBBO must have all of their operations consolidated into a single data center."¹⁴

Second, Regulation NMS does not itself define a maximum allowable latency in order for quotations to qualify as automated, and the Commission explicitly declined to do so, noting that any such standard could become obsolete over time.¹⁵ Regulation NMS adopts a *one second* standard with respect to the order protection rule in two particular circumstances: (i) in Rule 611(b)(1), the "self-help" exception to the trade-through prohibition (the Commission stating that the failure of an exchange repeatedly to respond within one second would constitute a "material delay" under the rule);¹⁶ and (ii) the "flickering quote" exception under Rule 611(b)(8), which allows a trade-through when a trading center displaying a protected quote had displayed, within one second before the trade, a quote that was equal or inferior to the traded-through price.¹⁷

Third, the language quoted by BATS in the Regulation NMS Adopting Release appears in the context of a discussion distinguishing manual from automated quotations (at the time the New York Stock Exchange maintained a "hybrid market" that combined features of both), and immediately follows a statement that a quotation is not automated "if any human intervention after the time an order is received is allowed to determine the action taken" with respect to the quote.¹⁸ The POP does not enable any human intervention to determine the action taken with respect to a quote or the order itself. Further, referring to the specific language in the passage cited, the POP clearly does not involve a "coding of

¹⁴ Letter to Brent Fields, Secretary, SEC, from Dave Lauer, Chairman, Healthy Markets Association (November 6, 2015) ("Healthy Markets Letter").

¹⁵ See Adopting Release, 70 Fed. Reg. at 37519.

¹⁶ Id.

¹⁷ Id. 70 Fed. Reg. at 37522. A mirror exception was recently included in the tick pilot plan approved by the Commission, with respect to pilot securities subject to a "trade at" requirement. See Exchange Act Release No. 74892 (May 6, 2015), 80 Fed. Reg. 27514 (May 13, 2015).

¹⁸ See Adopting Release, 70 Fed. Reg. at 37527.



automated systems” and, particularly given the context of the language, there is no reason to think that the Commission by referring to “intentional device” meant somehow to set geographic standards with regard to exchange matching system connections generally, or to prescribe the exact length of cable that is or is not allowable. Accordingly, the POP should no more be considered prohibited than existing access arrangements could be considered as designed to intentionally delay access to quotes by anyone who declines to pay for the privilege of the fastest access. As noted above, IEX has consciously adopted the POP as an alternative means of access that in our view is more equitable and less conflicted than existing co-location arrangements, and the Commission has never stated or even suggested that an exchange must offer co-location.

Moreover, the language in the Adopting Release and its context makes clear that the Commission was concerned about access to quotations, not simply the *speed* of quoting or trading. Quotes on existing exchanges can and do disappear while orders seeking to access them are in transit, depending on the relative speed (which, as explained, can consist of a multitude of factors) of those posting displayed quotes over those seeking to access them. The POP does not change this existing dynamic of quote accessibility since it is applied consistently to all members.

Finally, the Commission’s statements about the purpose for the requirements of automated quotations and Regulation NMS as a whole are instructive. In describing the difference between manual and automated quotations, the Commission stated: “For a trading center to qualify as entitled to display any protected quotations, the *public in general* must have fair and efficient access” to the quotations.¹⁹ IEX, partly through the POP, uniquely promotes fair access to quotations by the general public by limiting unfair advantages of latency arbitrage, and it promotes efficient access by allowing access within a time frame that is commensurate with that offered by other exchanges. Moreover, the POP provides fair and consistent access to its quotations in that all participants are provided access through equivalent means. In contrast, other exchanges offer materially lower latency, through a variety of means, to users willing to pay a significant fee premium, which creates the potential for higher relative latencies to all others who do not pay the same fees.

More broadly, the Commission described an overarching aim of the regulation as balancing “competition among markets and competition among individual orders...that together contribute to efficient markets.”²⁰ Nowhere in the Adopting Release or other pronouncements has the Commission suggested that exchanges must always give an advantage to the fastest traders, which would unduly tilt the balance in favor of competition among orders. The introduction of IEX will promote healthy competition among markets.

The POP is Different from Other “Speed Bump” Proposals

Citadel makes reference to an earlier proposal by Nasdaq OMX PSX, subsequently withdrawn, and two recent Canadian proposals, to support its contention that IEX’s quotes should not be considered

¹⁹ *Id.*, 70 Fed. Reg. at 37520.

²⁰ *Id.*, 70 Fed. Reg. at 37498.



protected. All of these are easily distinguishable. The PSX proposal would have implemented a five millisecond programmed delay in the time between when an incoming marketable liquidity taking order is received by the system to the time it is presented for execution.²¹ The new Canadian Alpha exchange introduces a software-based speed bump as a means to compete with the U.S. wholesaler payment for order flow. Liquidity seeking orders are subject to a two to three millisecond randomized delay, while “pay to post” orders would not be subject to the speed bump.²² The Aequitas exchange also imposes a randomized delay but imposes it only on certain participants that it identifies as associated with certain trading strategies.²³ The PSX proposal (as with the Canadian exchanges) would have changed the accessibility of a protected quote by altering the relative speeds of quotation makers and takers. IEX’s POP does not change that dynamic at all.

In all three cases, the length of the additional latency and the fact that they are enforced by automated system design make them different from the POP, which as noted is a form of physical distance, but a more important distinction is that they are imposed only on certain participants and not others. As discussed, the POP applies equally to all orders from all participants as a targeted measure to limit the potential that investors will be disadvantaged by latency arbitrage. These distinctions were explicitly recognized by various industry commenters on the Canadian proposals.²⁴ We take no view on the efficacy or benefits or disadvantages of the Canadian market models, but believe they would present a separate set of considerations and concerns than are presented by the POP if they were proposed to be applied to the U.S. markets.

Specific Comments About the POP

The POP will Not Negatively Impact the Determination of the NBBO or the Ability of Participants to React to Changing Prices

BATS’ comment letter poses a general concern that any intentional delay in the access to protected quotations negatively impacts price discovery for all participants. BATS offers a hypothetical as an illustration of its point.

With regard to the hypothetical, to the extent that it is intended to describe an exchange with an access design similar to IEX’s, we note only that it seems to assume that the exchange imposes latency on outbound messages to the SIPs (or else it assumes that the SIP is irrelevant for this purpose). As noted above, IEX does not require that transaction reports and updates to the SIPs go through the POP

²¹ See Exchange Act Release No. 67680 (August 17, 2012).

²² See Overview of TSX Alpha Exchange [available at](https://www.tsx.com/resource/en/1190/overview-of-tsx-alpha-exchange-2015-09-18-en.pdf) <https://www.tsx.com/resource/en/1190/overview-of-tsx-alpha-exchange-2015-09-18-en.pdf>.

²³ See, e.g., <https://aequitasneoexchange.com/en/trading/trading-solutions/neo-book/>.

²⁴ See, e.g., Letter to The Secretary, Ontario Securities Commission, and Anne Marie Beaudoin, Corporate Secretary, Autorite des marches financiers from CSTA Trading Issues Committee, Canadian Security Traders Association (August 17, 2015), [available at](http://www.canadiansta.org/wp-content/uploads/2015/10/CSTA-TIC-Speed-Bump-Amendments.pdf) <http://www.canadiansta.org/wp-content/uploads/2015/10/CSTA-TIC-Speed-Bump-Amendments.pdf>.



because IEX places importance on the consolidated data stream as the only data source readily available to all market participants and this dissemination of data creates the greatest parity across IEX market participants. We also note that Commission staff recently have declined to take a “no-action” position in response to a request that broker-dealers be permitted to provide data from an exchange’s own proprietary data feed to investors considering an investment decision without at the same time providing consolidated data, even if a subsequent order is processed by a system that relies on consolidated data when making execution and routing decisions.²⁵

It is important to consider that latency from any source and for any reason affects the speed with which market data is updated from the perspective of any particular participant, but we do not believe that the POP has a material adverse effect on price discovery, and certainly not from the viewpoint of long-term investors. In fact, even from the standpoint of electronic market making, Douglas Cifu, CEO of Virtu Financial, Inc., one of the leading and most widely-recognized technology-enabled market makers and global liquidity providers, submitted a comment letter stating that Virtu “engages in precisely the same market making strategies on IEX as we do on automated trading systems run by other broker-dealers...as well as on registered stock exchanges, including the New York Stock Exchange and Nasdaq. IEX’s “speed bump” has had no impact on Virtu’s market making and liquidity provisioning on the platform.”²⁶

As we note above, the very purpose of the POP is to help level the playing field by addressing unfair advantages that enable latency arbitrage to the disadvantage of investors. As the Commission stated at the time it adopted Regulation NMS, if there is conflict between the interests of short-term traders and long-term investors, it views its obligation as one of supporting long-term investors.²⁷ And we note that a number of commenters representing such long-term investors submitted comment letters supporting Commission approval of IEX as a national securities exchange, including its use of the POP.²⁸

Citadel and PTG raise various concerns that the POP would have negative impacts related to its impact on the NBBO and routing to various market centers. Each particular comment is addressed separately below but certain general observations apply to all of them.

First, the POP’s 350 microsecond delay is not material in relation to existing market-wide latency differences. As noted above, the Chicago Stock Exchange by geographical design creates a much longer latency period in order to access certain NMS stocks. The POP delay is also dramatically shorter than

²⁵ Letter from Stephen Luparello, Director, Division of Trading and Markets, to Eric Swanson, BATS Global Markets, Inc. (July 22, 2015), available at <https://www.sec.gov/divisions/marketreg/mr-noaction/2015/bats-one-072215-vendor-display.pdf>.

²⁶ Letter to Brent Fields, Secretary, SEC, from Douglas A. Cifu, CEO, Virtu Financial (November 6, 2015).

²⁷ Adopting Release, 70 Fed. Reg. at 37500.

²⁸ See, e.g., TCG Letter; Oppenheimer Letter; Southeastern Letter.



the latency that has been permitted for protected quotations published through FINRA's Alternative Display Facility and the National Stock Exchange's ("NSX") order delivery product.²⁹

BATS' letter implies that the IEX latency is "de minimis," although it expresses concern about the precedential effect in terms of future exchange proposals (discussed below). In contrast, Citadel characterizes 350 microseconds as an "exceedingly long period of time." In support of its assertion that 350 microseconds is material, Citadel cites to a research study of the Commission staff. However, based on a fuller reading of that study, the staff concluded that more than one third of all orders stay in force for at least five seconds, over 60% of orders that are cancelled are in force for more than half of one second, and less than 8% of all cancellations are faster than 500 microseconds.³⁰

As detailed above, the length of the POP is not material in relation to latency required to access other exchanges. If the Commission deemed that time increment to be unreasonably long for this purpose, then all exchanges logically should be required to alter their trading systems and technology and to change their means of providing access in order to achieve a different standard than now exists.

Moreover, it is important to understand that updates to the NBBO must obey the laws of physics and do not propagate instantaneously. Any calculation of the NBBO, whether observed by a market center, broker-dealer, or other market participant, depends on the observer collecting and aggregating quote updates generated by sources in different geographical locations, and thus the updates will inevitably be "delayed" to various degrees when the receipt of each is compared to the event that caused it. The "staleness" underpinning many of the individual comments addressed below is a natural consequence of interconnecting a geographically diverse marketplace. The effect of the POP in this context is precisely comparable to the effect, for example, of the choice of the NYSE to locate in Mahwah or The Chicago Stock Exchange in Chicago.

Also, some of these comments seem to explicitly or implicitly assume that the POP will apply to outbound messages to the SIPs. As described above, this is not the case. As Healthy Markets noted in its letter, the Commission has permitted exchanges to use the SIP feed to update their own view of the NBBO. "Given that the delay for IEX of 350 microseconds is orders of magnitude shorter than the variable lags between the SIP and proprietary data feeds, we believe IEX's proposed time delay is consistent with existing practices already approved by the SEC."³¹

²⁹ The NSX order delivery mechanism functioned by representing orders posted on the order books of electronic communication networks ("ECNs") as protected quotations disseminated through the NSX's proprietary data feed as well as its protected quotations provided to the SIP. When participants responded to those quotations by entering an order to NSX, it would forward the order to the ECN to attempt to trade against order resting on the NSX's order book. This delivery mechanism required communication messages to traverse multiple network and software devices across two market centers (NSX and the ECN) resulting in both distance and infrastructure latency between the point of order entry and the ECN matching engine as well related to the dissemination of ECN quotations.

³⁰ See Equity Market Speed Relative to Order Placement, Data Highlight 2014-02, SEC (March 19, 2014), [available at http://www.sec.gov/marketstructure/research/highlight-2014-02.html](http://www.sec.gov/marketstructure/research/highlight-2014-02.html).

³¹ Healthy Markets Letter.



Finally, we believe that these objections fundamentally rest on a false premise, namely, that in order for an entity to be approved as a national securities exchange, the entity cannot adopt *any* means to counter latency arbitrage or, conversely, that exchanges are *required* to enable individual trading firms to gain an advantage in any circumstance in which their technology (coupled with the exchange's own technology) will permit. For the reasons described above, we believe this reflects a fundamental misreading of Section 6 of the Exchange Act and Regulation NMS and the Commission's announced purposes in adopting it.

With respect to the particular points raised in the comments:

Citadel and PTG both state that the POP would have the effect of causing execution by participants at "stale" IEX quotes, in cases where prices in a stock have updated more quickly on other exchanges because of the POP. Citadel further states that if a participant seeks to avoid this problem by routing to IEX, the order would need to go through the POP, by which time the NBBO may have changed, causing the execution to occur at an inferior price.

First, we note that IEX quotes will not be subject to the POP in publishing to the SIPs, which many brokers, exchanges, and internalizers use as their official reference price for calculating price improvements, pricing pegged orders, and determining compliance with the trade-through rule. Further, in many cases firms acting as market centers are required under Rule 611 to send intermarket sweep orders ("ISOs") to protected quotations at exchanges that may be less quickly accessible than IEX, taking account of the 350 microseconds, and in this case there is no "re-routing" obligation. Where a firm is not acting as a market center, it has discretion in how it routes, including whether or not to use ISOs, and so has a choice in routing to protected quotations, subject to best execution obligations. Evidence of such discretionary routing can be anecdotally observed by a review of broker Rule 606 reports.

Citadel and PTG make the related objection that, because of the ban on displaying an order that causes a locked or crossed market, other markets would not be able to update their prices if IEX was displaying a "stale" quote. Citadel goes on to say that use of an ISO to avoid this result would not be a complete solution because participants would be exposed to trading more shares than they may need if they immediately trade on other venues.

We note that, based on disclosures required of exchanges by the Commission, all exchanges disclose that they rely on the SIPs for quote updates from at least one other exchange, and some for all away trading centers.³² Since quote updates from IEX will not be delayed to the SIPs, exchanges relying on the SIP will not experience an incremental delay in seeking to avoid locking or crossing the market. Exchanges can also choose to update their view of the market using IEX's direct feed, which often will be

³² See, e.g., Exchange Act Release No. 72710 (July 29, 2014)(NYSE & NYSE Mkt); Exchange Act Release no. 72708 (July 29, 2014)(NYSE Arca); Exchange Act Release No. 72684 (July 28, 2014) (Nasdaq exchanges); Exchange Act Release No. 72685 (July 28, 2014)(BATS exchanges); Exchange Act Release No. 72711 (July 29, 2014) (Chicago Stock Exchange).



be received by consumers faster than the SIP, even accounting for the POP, based on the current delays the SIPs incur for various reasons.

Citadel also states that a participant would be deterred in its ability to sweep through multiple price levels of displayed quotes because any price level that includes an IEX quotation would be “incorrect” for at least 700 microseconds, and this fact could lead to market instability, particularly on volatile trading days.

We note, again, that IEX will provide updates to the SIP immediately. Further, whether any difference exists in the ability to sweep multiple price levels at IEX versus other exchanges will depend on the distance between the point where the order originates (*e.g.*, a smart order router in Carteret, NJ) relative to the order destination where it is received (*e.g.*, at the NYSE in Mahwah, NJ), and differences in this regard between IEX and other exchanges will necessarily be “*de minimis*.” Any concern about increased market instability is completely unfounded and unsubstantiated – on volatile trading days, efficiency in clearing prices at multiple levels will be much more impacted by an exchange’s systems’ capacity, reliability and resilience, as well as that of the SIPs. We support the Commission’s actions to address those factors, both by the adoption of Regulation SCI and also its efforts to enhance the performance and resilience of the SIPs.

As an extension of the earlier allegation about “stale” price execution, Citadel further alleges that the POP would cause the execution and re-pricing of pegged orders on other venues based on IEX prices that have not yet updated, and that sophisticated market participants could take advantage of this factor by sending orders to sweep all NBBO quotes and then execute as many shares as possible on other venues through orders pegged to the NBBO, knowing that the NBBO will “appear to remain constant for at least 700 microseconds.”

Again, IEX will not delay quote updates to the SIPs, and in updating their prices venues can choose to use the IEX direct feed, which may be faster than the SIP, in the same way that they can consume the direct feeds of other exchanges, which *are* faster than the SIPs. Further, Citadel’s point acknowledges the very purpose for the POP. The fact that exchanges allow their own understanding of current market prices to update more slowly than their fastest participants, whose speed is enabled by the data and technology that the exchange itself is selling, is a critical issue that results in long-term investors receiving executions of their pegged orders at adverse or stale prices, and that is precisely what IEX is addressing. As to the potential for attempted manipulation of the NBBO, we note only that this potential exists today on all markets, but it is increased where the actual latency differences in reaching various markets is known only by relatively few participants. The benefit of the POP in this respect is that it is consistently applied to each order and fully transparent, and as an exchange we would expect, along with other SROs, to carefully scrutinize trading to identify any such activity.

The POP Does Not Discriminate Among Market Participants or Create Unfairness

Contrary to Citadel’s suggestion, the POP does not reflect a qualitative judgement about any individual market participants. As noted, the POP applies equally to all participants. While IEX has operated as an ATS, we have voluntarily operated as a “fair access” venue and of course will continue to do so as an exchange. The POP is intended to protect investor orders against latency arbitrage giving an unfair



advantage to certain trading strategies, but that does not amount to discrimination in the treatment of market participants.

The POP Will Act to Protect Investor Orders on the Exchange

BATS suggests that the effectiveness of the POP will be negated when IEX operates as an exchange. While BATS acknowledges that this point is not necessarily grounds for disapproving this aspect of IEX's model, we wish to respond to the point. BATS notes that the POP presently allows IEX time to update its understanding of market prices so that, when quotes on all exchanges move higher or lower, "pegged" orders resting on IEX will not be executed at a "stale" price. BATS posits an "edge case" hypothetical in which: an IEX member and members at other exchanges are displaying quotes in a particular stock at the NBBO; IEX has at the same time a resting midpoint pegged order in the same stock; participants on other exchanges adjust their bids downward; and because an IEX member will have to wait an additional 350 microseconds to similarly adjust its bid, thereby setting a new NBBO, the resting midpoint order will be subject to execution at the unadjusted price.³³

The edge case described by BATS is true for any exchange with a midpoint order and a displayed order at the NBBO on the same side of the market and is not unique to IEX. We note that the hypothetical itself acknowledges the existence of latency arbitrage strategies that the POP was designed to address. Further, in order for the midpoint on IEX to be disadvantaged, the new order instruction to sell at the midpoint must outrace the displayed bidder's cancel instruction to the IEX point-of-presence, where all instructions will be processed in order of arrival; since both instructions are equally affected by the POP, the length of fiber that must be traversed therein has no bearing on which will reach the Exchange's trading system first. Given that this example could occur on any exchange, we do not believe it affects the decision whether to approve the Application."

Finally, BATS states in its letter that it believes that IEX should amend its Form 1 to describe in detail the operation of the POP.³⁴ We agree with the suggestion, and will shortly be filing an amendment to the Form 1 to incorporate a description of what does and does not traverse the POP as described in the forepart of this letter. At the same time, we believe the Commission should require all exchanges to publicly disclose additional detail about their own co-location or other arrangements for accessing exchange systems, including detail about latencies that are associated with particular co-location, network, software, and other access arrangements compared to latencies associated with access through other means.

The Exchange Routing Function and Pegged Orders

The Exchange Does Not Provide an Unfair or Discriminatory Advantage to IEXS

The Router will be a facility of the Exchange operated by IEXS, the legal entity that currently operates IEX's alternative trading system. Users who mark their orders as "routable" choose to use the Exchange's Router to access liquidity at away trading centers with any unexecuted portions of orders

³³ BATS Letter at 2.

³⁴ BATS Letter at 4.



that are not traded on the IEX system. Once an order designated as “routable” is received by IEX, after traversing through the POP like all other orders, it interacts with any available liquidity on IEX. If there remains an unexecuted portion of the order, the Exchange will use its routing logic, which incorporates market data from away venues, to determine where and in what proportion to route. The Exchange will solely utilize IEXS as the routing broker to communicate its routing instructions to away markets.

IEXS, the routing broker, does not make any execution decisions or receive any market data from IEX for use in making routing decisions, which are made exclusively by the routing logic that exists within the Exchange in accordance with its rules. IEXS never receives a view of the Exchange’s NBBO nor does it receive any real-time market data from the Exchange. In essence, then, when IEXS receives routing instructions from the Exchange, it “knows” the number of shares to route and the venue to which it is routing, and not any information about any executions of a related parent order that may have occurred on the Exchange. Following completion of routing actions, as instructed by the Exchange, any unfilled balance of shares returns to the Exchange for processing in accordance with applicable rules. That message does not traverse the POP because it results from the processing of a parent order that has already done so.

In its comment letter, BATS alleges that IEX would provide an unfair and unreasonably discriminatory advantage to IEXS, its routing broker-dealer, by providing IEXS real-time market data in the form of an execution report from its proprietary market data feed that allows it to instantaneously update its view of the NBBO, while other members would be required to wait an additional 350 microseconds (the length associated with the POP), in order to receive this information.³⁵

BATS posits a hypothetical in which: the NBBO for stock XYZ is \$24.10 x \$24.11; 2,000 shares are offered on IEX at the best offer, and another 9,000 shares are offered in other markets at the same price; a routable buy order for 8,000 shares executes against an IEX displayed quote for 2,000 shares at \$24.11, and then IEX updates its offer to \$24.12. According to BATS’ description, IEXS would receive a real-time report of the execution and the updated offer on IEX and route the remainder of the order to other markets, while other participants would need to wait an additional 350 microseconds to learn of the updated quote information.

In fact, in the hypothetical described, IEXS will not receive market data from IEX or any other market. If the Exchange receives a routable order for 8,000 shares, the order will interact with any available liquidity on the Exchange. Any remaining shares will be sent to away venues by IEXS, which does not know how many shares were in the original parent order. How the order is routed will be determined by the Exchange based on its routing table, taking into account price and share information on other markets. IEX will not provide IEXS with any greater access to information or other advantage over any of its other members. For purposes of Regulation SCI, the SEC staff has recognized the distinction between routing systems that make trading decisions and those that only carry them out. In a recent FAQ, the staff said that “systems that are involved in the delivery of the order to a trading center after a routing

³⁵ BATS Letter at 5.



decision is made, and without any ability to alter that routing decision, would generally not be SCI systems...”

Consistent with Section 6 of the Exchange Act, the Exchange will not unfairly discriminate among customers, brokers, or dealers. Like other exchange routing brokers, all Exchange routing decisions are made based on actions that have just occurred on the Exchange and are in the process of being reported to participants, SIPs, and proprietary market data feeds. *Unlike* other exchange companies that route out orders to “sister” exchanges, IEXS will only route orders to unaffiliated exchanges.

The routing logic of the Exchange will operate in a manner comparable to the routing logic of other national securities exchanges, all of which access liquidity on the exchange and route any remaining shares to other venues. As an instructive example, the Commission approved a Nasdaq rule change to its router functionality in 2012 to allow routable orders to simultaneously execute against Nasdaq available shares and route to other markets. As explained in the approval order, previously, a routable order would first check for available shares on Nasdaq and then an order for remaining shares would be routed to away markets. Nasdaq observed that this led to “information leakage” because market participants could react to the Nasdaq execution such that “the available shares on the away market are no longer available.” Nasdaq determined that the simultaneous Nasdaq execution and routing away would avoid this deleterious impact. The Commission found that this rule change was consistent with the public interest standards of Section 6(b)(5) of the Exchange Act, saying that “The proposed rule change meets these requirements in that it promotes efficiency in the market, and should, as represented by NASDAQ, increase the likelihood that a routable order will receive faster and better executions. As a result, the proposed rule change could improve NASDAQ’s ability to effectively process routable orders. For these reasons, the Commission believes that the proposed change is consistent with Section 6(b)(5) of the Exchange Act, which requires, among other things, that the rules of a national securities exchange be designed to prevent fraudulent and manipulative acts and practices, **to promote just and equitable principles of trade, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest.**”³⁶ Thus, in approving the Nasdaq filing the Commission implicitly recognized and approved exchange routing brokers that route based on actions that have just occurred on the exchange but have not yet been reported out to participants and market data feeds. This precedent clearly supports approval of the Router as proposed.

Citadel states its understanding that the Router would not be required to go through the POP to access the trading system or when routing orders to other market centers and states that this provides an unfair competitive advantage over other routing brokers and IEX participants. Citadel further suggests that IEX should be required to impose the same access delay on its affiliated broker-dealer that it imposes on participants seeking access to its system. PTG states that “when routing orders to IEX, this router could effectively bypass the IEX access delay that all other broker-dealers must endure,” which would provide a competitive advantage.

³⁶ Exchange Act Release No. 67639 (August 12, 2012) (**with emphasis added**).



As noted above, IEXS, the routing broker-dealer, does not route to IEX and all orders, routable or otherwise, must pass through the POP, so there is no competitive disparity in terms of access to IEX's trading system. There is no rationale for requiring that IEXS should incur a delay in routing out to other markets, since it will not have a competitive advantage in accessing those markets. It would be inconsistent with the Commission's approval of the Nasdaq routing structure to require that the Router be subjected to a delay in routing to other markets. And as noted above, IEXS does not access IEX market data or have any information about any executions that occurred on IEX. Therefore, IEX's exchange/router arrangement is not inconsistent with router arrangements and practices of other exchanges that have been approved by the Commission.

Citadel's reference to the Commission's disapproval of a Nasdaq rule filing in 2013 is inapposite. That filing concerned a Nasdaq proposal to offer a new benchmark order type, and the Commission expressed concern that the "child" orders that would be generated by a Nasdaq application would not be subject to adequate risk controls. The decision did not involve the appropriateness of routing functionality offered by the exchange.³⁷ The approval of the Nasdaq rule change referenced above is relevant to the issue and directly supports the manner in which the Router will operate.

IEX agrees with some comments received that exchanges should be required to disclose more fully the operation of how order routers and market centers interact, in order to ensure sufficient independence of the exchange and routing functions. We fully agree, and we will soon be filing an amendment to our Application to provide in substance the description of the operation of the Router described above and would hope that similar disclosures will be made by other exchanges.

IEX will Not Give any Unfair Advantage to Pegged Orders

Both Citadel and PTG further allege that IEX would provide an unwarranted advantage to pegged orders over displayed orders, since pegged orders can reprice based on proprietary data feeds from other exchanges, without going through the POP. Citadel goes on to allege that IEX will favor dark liquidity over displayed orders because displayed orders cannot react to market changes without incurring a 350 microsecond delay.

First, we again stress that all orders, displayed or not, will be subject to the POP before the order is received by the System so there is no discrimination in terms of how orders can enter the trading system, displayed or non-displayed. Further, displayed orders will always trade with priority ahead of non-displayed orders at the same price as part of IEX's book priority.

In addition, all pegged orders offered by all exchanges and ATs are able to reprice based on each venue's systems for updating its own understanding of market prices, while non-pegged orders require action to adjust the price. Thus pegged orders can always reprice more quickly than non-pegged orders, provided that the exchange has the most up to date view of the market.

IEX expects as an exchange to offer a quality market for both displayed and non-displayed orders. We think it is vitally important to continue to be able to offer quality execution to all investors through the

³⁷ Exchange Act Release No. 68629 (January 11, 2013).



use of pegged order types by updating our understanding of market prices as quickly as possible. At the same time, there are other factors that will encourage many participants to send displayed orders – among others, all non-displayed orders will cede priority to displayed orders at the same price. Further, IEX plans to discount pricing to both provide and access displayed orders relative to non-displayed orders. To suggest that each pegged order would need to pass through the POP each time it reprices is not practical and would negate the value of offering pegged orders, and would be inconsistent with the manner in which exchanges currently operate.

One of the main beneficiaries of pegged orders on IEX are long-term investors that have no need to purchase high-speed data and co-location at the exchanges, and instead rely on IEX to fairly and accurately price their orders that are resting on IEX's book. Pegged orders, like all orders on IEX, first have to travel through the POP before entering IEX's trading system; IEX reprices pegged orders without resending the order back through the POP to ensure that pegged orders are not disadvantaged by high-speed strategies of participants that may have a more current view of market prices.

Citadel's statement that the Discretionary Peg Order type offered by IEX operates similarly to a broker-dealer exercising discretion over a client's order is incorrect. Discretionary Peg orders, as described in detail in the Application and proposed IEX rules, rest at the near quote and can execute up to the midpoint based on available contra interest other than in situations in which the system detects a "crumbling quote." Any action taken is based on system logic and is entirely automated, like other pegged orders. Citadel's further objection to this order type on the ground that IEX will be "shielded by the doctrine of regulatory immunity" in the event of any erroneous handling of an order has no bearing on the Commission's action on the Application. Other exchanges offer a broad range of complicated order types, including non-displayed pegging and discretionary order types. IEX's Discretionary Peg order type does not raise any novel issues.

Astonishingly, Citadel suggests that the offering of pegged order types generally, which are offered by all exchanges, "would disadvantage less sophisticated investors to the benefit of more sophisticated investors and broker-dealers." Directly to the contrary, as described above the use of pegged order types in connection with the POP is specifically designed to protect resting orders against adverse selection from latency arbitrage. And IEX's experience to date is that Discretionary Peg orders are used by a broad cross section of subscribers, and not limited to so-called sophisticated investors. Citadel seems to assume that any measure of protection for one group of investors can only be gained to the detriment of others. In fact, by reducing incentives for certain speed-based strategies, IEX expects to provide a better experience for institutional and retail investors, brokers, and market makers, and to strengthen investor confidence generally. Market integrity is not a zero-sum game.

Finally, Citadel and PTG both seek to draw a comparison between the operation of IEX's proposed pegged order types and "last look" functionality that has been used in foreign currency markets. We note only that there is no comparison to be drawn between the two; an IEX pegged order is a non-displayed order priced based on IEX's view of market conditions and produces a locked-in trade if a contra-side qualifying matching order arrives, whereas "last look" functionality in FX markets, allows participants to enter displayed orders, receive a contra-side matching order and, after considering it, reject it and decline to trade immediately prior to execution.



Broker Priority

Several comment letters expressed concern about the “broker priority” mechanism presently offered by IEX, which allows contra orders from the same subscriber to match in certain circumstances. IEX is not seeking approval to include broker priority as a part of our Application.

Additional Matters

Citadel raises a series of questions about IEX’s exchange operations. Questions 1, 2, 3, 4, 5, and 7 are fully addressed by the foregoing. With respect to question 6, while it is not clear what is meant by “real-time communications,” this letter provides complete information on the operation of the POP. With respect to question 8, subject to Commission approval of our Application, IEX will file all proposed fees pursuant to Section 19(b) of the Exchange Act.

Approval of the Application Should Not Be Conditioned on Market-Wide Standards on “Speed Bumps”

As noted above, BATS suggests that the Commission, in approving the Application, should articulate new standards about the maximum amount of additional latency an exchange may impose with respect to accessing quotations.

Although we understand and respect the desire for clarity as to what measures exchanges may take to limit speed advantages, we do not agree that it is incumbent on the Commission, or even wise, to attempt at this time to specify a latency standard that should act as a condition to protected quote status for all exchanges. First, to attempt to do so could create unintended consequences by establishing a new standard that all markets might gravitate to, without first understanding how that standard would play out and who would be the primary beneficiary. IEX does not seek a regulatory mandate that would impose any aspect of our model on others and believes that the Commission can better facilitate market progress and constructive competition by considering each exchange proposal or innovation on its own merits and allowing market participants to make their own choices to suit their respective needs within the existing regulatory framework.

More broadly, we don’t think that issues of permissible speed bumps can be considered in isolation from other issues that involve latency differences, geographic or otherwise. For example, co-location practices of existing exchanges, coupled with exponentially increasing market data fees, deserve heightened attention. As noted above, co-location practices, coupled with the sale of low-latency market data, are intentionally designed to cause market participants to pay for preferred access, and result in delayed access for those who will not or cannot pay these prices. An important related issue is the latency difference between the SIPs and proprietary data feeds. The Commission has taken important steps to address that issue by requiring exchanges to provide time stamps on their messages sent to the SIPs, and by urging greater investment in the SIPs, but more work remains.



Conclusion

These matters of market-wide concern are all worthy of serious review and consideration, but resolving them cannot be a condition for approving the Application. We respectfully submit that the equity markets should stand for freedom of choice, and very clearly, IEX has demonstrated that it is a credible choice for investors, brokers, and market makers who do not need to pay for privileged access to our market and instead choose to meet on equal and fair terms to allow the best investment and/or trading strategy to determine who can succeed, as opposed to who can purchase the fastest data and technology. Accordingly, we believe that our exchange application is consistent with Section 6 of the Exchange Act and should be approved by the Commission.

Sincerely,

Sophia Lee

General Counsel

cc: The Honorable Mary Jo White, Chair
The Honorable Luis A. Aguilar, Commissioner
The Honorable Michael S. Piwowar, Commissioner
The Honorable Kara M. Stein, Commissioner
Stephen Luparello, Director, Division of Trading and Markets
Gary Goldsholle, Deputy Director, Division of Trading and Markets
David S. Shillman, Associate Director, Division of Trading and Markets
Richard Holley III, Associate Director, Division of Trading and Markets