

Required fields are shown with yellow backgrounds and asterisks.

Page 1 of * 33	SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549 Form 19b-4		File No.* SR - 2017 - * 62	Amendment No. (req. for Amendments *)
Filing by NASDAQ PHLX LLC Pursuant to Rule 19b-4 under the Securities Exchange Act of 1934				
Initial * <input checked="" type="checkbox"/>	Amendment * <input type="checkbox"/>	Withdrawal <input type="checkbox"/>	Section 19(b)(2) * <input checked="" type="checkbox"/>	Section 19(b)(3)(A) * <input type="checkbox"/>
			Section 19(b)(3)(B) * <input type="checkbox"/>	
Pilot <input type="checkbox"/>	Extension of Time Period for Commission Action * <input type="checkbox"/>	Date Expires * <input type="text"/>	Rule <input type="checkbox"/> 19b-4(f)(1) <input type="checkbox"/> 19b-4(f)(4) <input type="checkbox"/> 19b-4(f)(2) <input type="checkbox"/> 19b-4(f)(5) <input type="checkbox"/> 19b-4(f)(3) <input type="checkbox"/> 19b-4(f)(6)	
Notice of proposed change pursuant to the Payment, Clearing, and Settlement Act of 2010			Security-Based Swap Submission pursuant to the Securities Exchange Act of 1934	
Section 806(e)(1) * <input type="checkbox"/>	Section 806(e)(2) * <input type="checkbox"/>	Section 3C(b)(2) * <input type="checkbox"/>		
Exhibit 2 Sent As Paper Document <input type="checkbox"/>	Exhibit 3 Sent As Paper Document <input type="checkbox"/>			
Description				
Provide a brief description of the action (limit 250 characters, required when Initial is checked *).				
<input type="text" value="A proposal to introduce the Intellicator Analytic Tool"/>				
Contact Information				
Provide the name, telephone number, and e-mail address of the person on the staff of the self-regulatory organization prepared to respond to questions and comments on the action.				
First Name *	<input type="text" value="Daniel"/>	Last Name *	<input type="text" value="Cantu"/>	
Title *	<input type="text" value="Associate General Counsel"/>			
E-mail *	<input type="text" value="daniel.cantu@nasdaq.com"/>			
Telephone *	<input type="text" value="(301) 978-8469"/>	Fax	<input type="text"/>	
Signature				
Pursuant to the requirements of the Securities Exchange Act of 1934,				
has duly caused this filing to be signed on its behalf by the undersigned thereunto duly authorized.				
(Title *)				
Date	<input type="text" value="08/02/2017"/>	<input type="text" value="Executive Vice President and General Counsel"/>		
By	<input type="text" value="Edward S. Knight"/>	<input type="text"/>		
(Name *)		<input type="text" value="edward.knight@nasdaq.com"/>		
NOTE: Clicking the button at right will digitally sign and lock this form. A digital signature is as legally binding as a physical signature, and once signed, this form cannot be changed.				

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

For complete Form 19b-4 instructions please refer to the EFFF website.

Form 19b-4 Information *

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The self-regulatory organization must provide all required information, presented in a clear and comprehensible manner, to enable the public to provide meaningful comment on the proposal and for the Commission to determine whether the proposal is consistent with the Act and applicable rules and regulations under the Act.

Exhibit 1 - Notice of Proposed Rule Change *

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The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO]-xx-xx). A material failure to comply with these guidelines will result in the proposed rule change being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)

Exhibit 1A- Notice of Proposed Rule Change, Security-Based Swap Submission, or Advance Notice by Clearing Agencies *

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The Notice section of this Form 19b-4 must comply with the guidelines for publication in the Federal Register as well as any requirements for electronic filing as published by the Commission (if applicable). The Office of the Federal Register (OFR) offers guidance on Federal Register publication requirements in the Federal Register Document Drafting Handbook, October 1998 Revision. For example, all references to the federal securities laws must include the corresponding cite to the United States Code in a footnote. All references to SEC rules must include the corresponding cite to the Code of Federal Regulations in a footnote. All references to Securities Exchange Act Releases must include the release number, release date, Federal Register cite, Federal Register date, and corresponding file number (e.g., SR-[SRO]-xx-xx). A material failure to comply with these guidelines will result in the proposed rule change, security-based swap submission, or advance notice being deemed not properly filed. See also Rule 0-3 under the Act (17 CFR 240.0-3)

Exhibit 2 - Notices, Written Comments, Transcripts, Other Communications

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Exhibit Sent As Paper Document

Copies of notices, written comments, transcripts, other communications. If such documents cannot be filed electronically in accordance with Instruction F, they shall be filed in accordance with Instruction G.

Exhibit 3 - Form, Report, or Questionnaire

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Exhibit Sent As Paper Document

Copies of any form, report, or questionnaire that the self-regulatory organization proposes to use to help implement or operate the proposed rule change, or that is referred to by the proposed rule change.

Exhibit 4 - Marked Copies

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The full text shall be marked, in any convenient manner, to indicate additions to and deletions from the immediately preceding filing. The purpose of Exhibit 4 is to permit the staff to identify immediately the changes made from the text of the rule with which it has been working.

Exhibit 5 - Proposed Rule Text

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The self-regulatory organization may choose to attach as Exhibit 5 proposed changes to rule text in place of providing it in Item I and which may otherwise be more easily readable if provided separately from Form 19b-4. Exhibit 5 shall be considered part of the proposed rule change.

Partial Amendment

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If the self-regulatory organization is amending only part of the text of a lengthy proposed rule change, it may, with the Commission's permission, file only those portions of the text of the proposed rule change in which changes are being made if the filing (i.e. partial amendment) is clearly understandable on its face. Such partial amendment shall be clearly identified and marked to show deletions and additions.

1. Text of the Proposed Rule Change

(a) NASDAQ PHLX LLC (“Phlx” or “Exchange”), pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”)¹ and Rule 19b-4 thereunder,² is filing with the Securities and Exchange Commission (“SEC” or “Commission”) a proposal to introduce the Intellicator Analytic Tool, a new market data product designed to analyze options market transactions and synthesize that analysis to assist investors in assessing the equities underlying those transactions.

The Exchange has designated that this filing be operative on September 15, 2017, if approved by the Commission.

A notice of the proposed rule change for publication in the Federal Register is attached hereto as Exhibit 1. The text of the proposed rule change is attached as Exhibit

5.

(b) Not applicable.

(c) Not applicable.

2. Procedures of the Self-Regulatory Organization

The Board of Directors of the Exchange approved the submission of this proposed rule change on August 2, 2017. No other action by the Exchange is necessary for the filing of the rule change.

Questions and comments on the proposed rule change may be directed to:

Daniel A. Cantu
Associate General Counsel
Nasdaq, Inc.
(301) 978-8469

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

3. Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

a. Purpose

The purpose of the proposed rule change is to introduce the Intellicator Analytic Tool, a new, optional market data product available for a corresponding fee³ designed to analyze options market transactions and synthesize that analysis to assist investors in assessing the equities underlying those transactions.

Options market transactions can be complex; the purpose of the Intellicator Analytic Tool is to distill options data into a form that will help investors understand options market movements and provide them with actionable insight in changing market conditions. The Intellicator Analytic Tool will offer three increasingly sophisticated levels of analysis. The first level, the Single-Factor Analytic Bundle, calculates fundamental measures, or “factors,” of options market activity—Put/Call Ratio, Moneyness Ratio, Volume-Weighted Implied Volatility, Volume-Weighted Average Delta, and Weighted Average Strike Price—and applies those factors to certain segments of activity on the Exchange. The second level, the Single-Factor Intellicator, uses machine learning—an analytical technique that employs algorithms that iteratively “learn” from data to find hidden insights without explicit programming—to summarize in a single numeral the information contained within a Single-Factor Analytic Bundle. The third level, the Multi-Factor Intellicator, uses machine learning to summarize in a single numeral all of the information contained within all of the five Single-Factor Analytic Bundles offered with this product.

³ A separate filing will address the pricing for the Intellicator Analytic Tool, which will also be implemented on September 15, 2017, if approved by the Commission.

These three levels will be available for purchase separately or together to allow investors to choose the tool that best fits their needs (as previously noted, the fee schedule for the Intellicator Analytic Tool will be included in a future filing). The most distilled features such as the Single-Factor or Multi-Factor Intellicators are likely to be useful for retail investors, while the raw calculations available in the Single-Factor Analytic Bundle are designed to be useful to sophisticated investors to build customized models of market sentiment or for use as inputs to trading models. The Intellicator Analytic Tool is designed to increase visibility into options transactions and democratize information to provide the benefits of sophisticated analytical techniques to firms without the technology, staff or wherewithal to conduct a comparable analysis on their own.

Each level is described in further detail below.

Single-Factor Analytic Bundle

A Single-Factor Analytic Bundle is a set of five calculations of a single factor⁴ for a segment of the market. These five factors are:

- (i) Put/Call Ratio: The total number of put contracts traded divided by the total number of put and call contracts traded within a specific time interval for each underlying symbol.
- (ii) Moneyness Ratio: The natural log of the ratio of the price of the underlying equity to the strike price of the options contract traded within a specific time interval.⁵

⁴ As explained above, a factor is a fundamental measure of market activity.

⁵ The ratios for calls are multiplied by 1, while ratios for puts are multiplied by -1.

- (iii) Volume-Weighted Implied Volatility: A calculation of the implied volatility of the options contracts traded within a specific time interval, weighted by the number of contracts traded.
- (iv) Volume-Weighted Average Delta: A calculation of the projected change to an option price given a \$1 change in the equity price, weighted by the number of contracts traded within a specific time interval.
- (v) Weighted Average Strike Price: A calculation of the strike price of the options contracts traded within a given time interval weighted by the number of days to expiration.⁶

These five factors will be applied to segments of the options market identified as having the strongest relationship with equity prices. Examples of such segments include: “Customers⁷ who buy to open a new position,” “Non-Customers⁸ who sell to close an existing position,” or “Market Makers⁹ engaging in complex orders.” Segments may also be compared with each other to determine the direction of equity prices. For example, the prices of simple orders¹⁰ may be compared to those of complex orders,¹¹ the prices of

⁶ A higher weighting is given to contracts near expiration.

⁷ The term “Customer” applies to any transaction that is identified by a member or member organization for clearing in the Customer range at The Options Clearing Corporation (“OCC”) which is not for the account of a broker or dealer or for the account of a “Professional” (as that term is defined in Rule 1000(b)(14)).

⁸ A “Non-Customer” is any market participant other than a Customer or a Market Maker, such as Professional Customer, Firm, Broker-Dealer, or Joint Back Office (as defined below).

⁹ “Market Makers” includes Specialists (see Exchange Rule 1020(a)), Registered Option Traders (see Exchange Rule 1014(b)), Streaming Quote Traders (see Exchange Rule 1014(b)(ii)(A)), and Remote Streaming Quote Traders (see Exchange Rule in 1014(b)(ii)(B)).

options contracts with less than 7 days to expiration may be compared to those with less than 30 days to expiration, or the prices of options contracts that are in-the-money¹² may be compared to those that are out-the-money¹³ or at-the-money.¹⁴ The goal of all of these comparisons is to glean information from price differences that may be useful in determining the price direction of the associated equity.

Segments are expected to change over time as the Exchange refines its analysis of the relationship between particular options market segments and equity prices. Indeed, change is a feature of the product: the Intellicator Analytic Tool is intended to evolve over time based on the latest data, machine learning, and analytical techniques. Each Single-Factor Analytic Bundle will contain factor calculations for between five and fifty market segments; the precise number will be based on an analysis of the optimum number and type of segments required for the analysis.

Each segment will be constructed using the following fields, taken from both buy- and sell-side transaction information:

- (i) Electronic vs. floor transaction;

¹⁰ A single-leg option order.

¹¹ A multi-legged option order.

¹² An options contract is in-the-money when the strike price is below 2.5% of the price of the underlying security for a call contract, or above 2.5% of the underlying security for a put contract.

¹³ An options contract is out-the-money when the strike price is above 2.5% of the price of the underlying security for a call contract, or below 2.5% of the underlying security for a put contract.

¹⁴ An options contract is at-the-money when the strike price is within 2.5% of the price of the underlying security, either above or below, for either a call or a put contract.

- (ii) Buy vs. sell;
- (iii) Opening vs. closing a position;
- (iv) Customer type (Customer, Professional Customer,¹⁵ Firm,¹⁶ Broker-Dealer,¹⁷ Market Maker, Joint Back Office (“JBO”),¹⁸ or off-floor broker-dealer);
- (v) Execution type (simple order, complex order, price improvement (“PIXL”) Order,¹⁹ qualified contingent cross (“QCC”),²⁰ Sweep,²¹ responder to an auction, or quote from a Market Maker);
- (vi) Liquidity type (adding or removing liquidity, or not applicable); and
- (vii) Limit vs. market order.

¹⁵ The term “Professional Customer” applies to transactions for the accounts of Professionals, as defined in Exchange Rule 1000(b)(14).

¹⁶ The term “Firm” applies to any transaction that is identified by a member or member organization for clearing in the Firm range at the OCC.

¹⁷ The term “Broker-Dealer” applies to any transaction which is not subject to any of the other transaction fees applicable within a particular category.

¹⁸ The term “Joint Back Office” or “JBO” applies to any transaction that is identified by a member or member organization for clearing in the Firm range at OCC and is identified with an origin code as a JBO. A JBO participant is a member, member organization or non-member organization that maintains a JBO arrangement with a clearing broker-dealer (“JBO Broker”) subject to the requirements of Regulation T, Section 220.7 of the Federal Reserve System as discussed at Exchange Rule 703.

¹⁹ A two-sided order that is entered into a price improvement auction.

²⁰ A stock-tied option order consisting of a minimum of 1,000 options contracts bundled together for the purpose of crossing the order.

²¹ An order type used to accumulate a position quickly by simultaneously sending the order to multiple exchanges.

Market segments may also be identified using standard transaction information, such as date, time, symbol for the underlying security, security type (index, equity, or ETF), option symbol, expiration date, strike price, put vs. call, series type (standard vs. non-standard),²² number of contracts traded, and the trading price of the option and the underlying equity.

Calculations will be based on “rolling aggregates” of trading data, updated every 60 seconds over the course of the day.

Single-Factor Intellicators

A Single-Factor Intellicator uses machine learning to summarize in a single numeral the information contained within a Single-Factor Analytic Bundle. The calculation for the Single-Factor Intellicator will change over time, as machine learning algorithms use data to learn about the relationship between options and equities, and modify the calculation accordingly.

Calculations for Single-Factor Intellicators, like calculations for each factor, will be updated every 60 seconds over the course of the day.

Multi-Factor Intellicator

The Multi-Factor Intellicator uses machine learning to summarize in a single numeral all of the calculations contained in all of the five Single-Factor Analytic Bundles. The Multi-Factor Intellicator will also be updated every 60 seconds over the course of the day.

Proposed Pricing Structure

²² Standard options contracts expire on the third Friday of every month; non-standard contracts do not.

As previously noted, the fee schedule for the Intellicator Analytic Tool will be included in a future filing.

b. Statutory Basis

The Exchange believes that its proposal is consistent with Section 6(b) of the Act,²³ in general, and furthers the objectives of Section 6(b)(5)²⁴ of the Act in particular. The proposal is designed 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 by prompting transparency and increasing visibility into options transactions and democratizing information to provide the benefits of sophisticated analytical techniques to firms without the technology, staff or wherewithal to conduct a comparable analysis on their own.

In adopting Regulation NMS,²⁵ the Commission granted SROs and broker-dealers increased authority and flexibility to offer new and unique market data to the public. It was believed that this authority would expand the amount of data available to consumers, and also spur innovation and competition for the provision of market data. The Intellicator Analytic Tool—a new market data product designed to analyze options market transactions and synthesize that analysis to help investors assess the equities underlying those transactions—is the type of market data product that the Commission envisioned when it adopted regulation NMS. The Commission concluded that

²³ 15 U.S.C. 78f(b).

²⁴ 15 U.S.C. 78f(b)(5).

²⁵ See Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496 (June 29, 2005) (“Regulation NMS Adopting Release”).

Regulation NMS—deregulating the market in proprietary data—would further the Act’s goals of facilitating efficiency and competition:

[E]fficiency is promoted when broker-dealers who do not need the data beyond the prices, sizes, market center identifications of the NBBO and consolidated last sale information are not required to receive (and pay for) such data. The Commission also believes that efficiency is promoted when broker-dealers may choose to receive (and pay for) additional market data based on their own internal analysis of the need for such data.²⁶

By removing unnecessary regulatory restrictions on the ability of exchanges to sell their own data, Regulation NMS advanced the goals of the Act and the principles reflected in its legislative history.

In NetCoalition v. Securities and Exchange Commission²⁷ (“NetCoalition”) the D.C. Circuit upheld the Commission’s use of a market-based approach in evaluating the fairness of market data fees against a challenge claiming that Congress mandated a cost-based approach.²⁸ As the court emphasized, the Commission “intended in Regulation NMS that ‘market forces, rather than regulatory requirements’ play a role in determining the market data . . . to be made available to investors and at what cost.”²⁹ “No one disputes that competition for order flow is ‘fierce.’ . . . As the SEC explained, ‘[i]n the U.S. national market system, buyers and sellers of securities, and the broker-dealers that act as their order-routing agents, have a wide range of choices of where to route orders for execution’; [and] ‘no exchange can afford to take its market share percentages for

²⁶ Id.

²⁷ NetCoalition v. SEC, 615 F.3d 525 (D.C. Cir. 2010).

²⁸ See NetCoalition, at 534 - 535.

²⁹ Id. at 537.

granted’ because ‘no exchange possesses a monopoly, regulatory or otherwise, in the execution of order flow from broker dealers’”³⁰

Data products such as the Intellicator Analytic Tool are a means by which exchanges compete to attract order flow. To the extent that exchanges are successful in such competition, they earn trading revenues and also enhance the value of their data products by increasing the amount of data they provide. The need to compete for order flow places substantial pressure upon exchanges to keep their fees for both executions and data reasonable.³¹

4. Self-Regulatory Organization’s Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act. Indeed, the Exchange believes that the Intellicator Analytic Tool enhances competition by increasing transparency into options transactions and democratizing information to provide the benefits of sophisticated analytical techniques to firms without the technology, staff or wherewithal to conduct a comparable analysis on their own.

The market for data products is extremely competitive and firms may freely choose alternative venues and data vendors based on the aggregate fees assessed, the data offered, and the value provided. Numerous exchanges compete with each other for listings, trades, and market data itself, providing virtually limitless opportunities for entrepreneurs who wish to produce and distribute their own market data. Transaction

³⁰ Id. at 539 (quoting Securities Exchange Act Release No. 59039 (December 2, 2008), 73 FR 74770, 74782-83 (December 9, 2008) (SR-NYSEArca-2006-21)).

³¹ See Sec. Indus. Fin. Mkts. Ass’n (SIFMA), Initial Decision Release No. 1015, 2016 SEC LEXIS 2278 (ALJ June 1, 2016) (finding the existence of vigorous competition with respect to non-core market data).

execution and proprietary data products are complementary in that market data is both an input and a byproduct of the execution service. In fact, market data and trade execution are a paradigmatic example of joint products with joint costs. The decision whether and on which platform to post an order will depend on the attributes of the platform where the order can be posted, including the execution fees, data quality and price. Without trade executions, exchange data products cannot exist. Moreover, data products, including the Intellicator Analytic Tool, are valuable to many end users only insofar as they provide information that end users expect will assist them or their customers in making trading decisions.

The costs of producing market data include not only the costs of the data distribution infrastructure, but also the costs of designing, maintaining, and operating the exchange's transaction execution platform and the cost of regulating the exchange to ensure its fair operation and maintain investor confidence. The total return that a trading platform earns reflects the revenues it receives from both products and the joint costs it incurs. Moreover, the operation of the exchange is characterized by high fixed costs and low marginal costs. This cost structure is common in content distribution industries such as software, where developing new software typically requires a large initial investment (and continuing large investments to upgrade the software), but once the software is developed, the incremental cost of providing that software to an additional user is typically small, or even zero (e.g., if the software can be downloaded over the internet after being purchased).³² It is costly to build and maintain a trading platform, but the

³² See William J. Baumol and Daniel G. Swanson, "The New Economy and Ubiquitous Competitive Price Discrimination: Identifying Defensible Criteria of Market Power," Antitrust Law Journal, Vol. 70, No. 3 (2003).

incremental cost of trading each additional share on an existing platform, or of distributing an additional instance of data, is very low. Market information and executions are each produced jointly (in the sense that the activities of trading and placing orders are the source of the information that is distributed) and are each subject to significant scale economies.

Competition among trading platforms can be expected to constrain the aggregate return each platform earns from the sale of its joint products. The level of competition and contestability in the market is evident in the numerous alternative venues that compete for order flow, including SRO markets, as well as internalizing BDs and various forms of alternative trading systems (“ATs”), including dark pools and electronic communication networks (“ECNs”). Each SRO market competes to produce transaction reports via trade executions, and two FINRA-regulated TRFs compete to attract internalized transaction reports. It is common for BDs to further and exploit this competition by sending their order flow and transaction reports to multiple markets, rather than providing them all to a single market. Competitive markets for order flow, executions, and transaction reports provide pricing discipline for the inputs of proprietary data products. The large number of SROs, TRFs, BDs, and ATs that currently produce proprietary data or are currently capable of producing it provides further pricing discipline for proprietary data products. Each SRO, TRF, ATs, and BD is currently permitted to produce proprietary data products, and many currently do or have announced plans to do so, including Nasdaq, NYSE, NYSE MKT, NYSE Arca, and the BATS exchanges.

In this case, the proposed rule change enhances competition by introducing a new product that increases transparency into options transactions and democratizes information by providing the benefits of sophisticated analytical techniques to firms without the technology, staff or wherewithal to conduct a comparable analysis on their own. If the Intellicator Analytic Tool were to become unattractive, those firms would opt not to purchase the product. As such, the Exchange does not believe that the proposed changes will impair competition in the financial markets.

5. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received from Members, Participants, or Others

No written comments were either solicited or received.

6. Extension of Time Period for Commission Action

The Exchange does not consent to an extension of the time period for Commission action.

7. Basis for Summary Effectiveness Pursuant to Section 19(b)(3) or for Accelerated Effectiveness Pursuant to Section 19(b)(2)

The Exchange requests accelerated effectiveness pursuant to Section 19(b)(2) of the Act.³³ The Exchange believes that there is good cause for the Commission to accelerate effectiveness because the proposed product is designed to increase transparency and provide the benefits of sophisticated analytical techniques to firms and individuals able to benefit from that analysis. Such broader distribution of data and information is consistent with the protection of investors and the public interest. Accordingly, the Exchange believes that no regulatory purpose would be served by

³³ 15 U.S.C. 78s(b)(2).

delaying implementation of the proposal beyond the close of the period for public comment on the proposed rule change.

8. Proposed Rule Change Based on Rules of Another Self-Regulatory Organization or of the Commission

Not applicable.

9. Security-Based Swap Submissions Filed Pursuant to Section 3C of the Act

Not applicable.

10. Advance Notices Filed Pursuant to Section 806(e) of the Payment, Clearing and Settlement Supervision Act

Not applicable.

11. Exhibits

1. Notice of Proposed Rule Change for publication in the Federal Register.

5. Text of the proposed rule change.

EXHIBIT 1

SECURITIES AND EXCHANGE COMMISSION
(Release No. _____ ; File No. SR-Phlx-2017-62)

August __, 2017

Self-Regulatory Organizations; NASDAQ PHLX LLC; Notice of Filing of Proposed Rule Change to Introduce the Intellicator Analytic Tool

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”)¹, and Rule 19b-4 thereunder,² notice is hereby given that on August 2, 2017, NASDAQ PHLX LLC (“Phlx” or “Exchange”) filed with the Securities and Exchange Commission (“SEC” or “Commission”) the proposed rule change as described in Items I, II, and III, below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization’s Statement of the Terms of Substance of the Proposed Rule Change

The Exchange proposes to introduce the Intellicator Analytic Tool, a new market data product designed to analyze options market transactions and synthesize that analysis to assist investors in assessing the equities underlying those transactions.

The text of the proposed rule change is available on the Exchange’s Website at <http://nasdaqphlx.cchwallstreet.com/>, at the principal office of the Exchange, and at the Commission’s Public Reference Room.

¹ 15 U.S.C. 78s(b)(1).

² 17 CFR 240.19b-4.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The purpose of the proposed rule change is to introduce the Intellicator Analytic Tool, a new, optional market data product available for a corresponding fee³ designed to analyze options market transactions and synthesize that analysis to assist investors in assessing the equities underlying those transactions.

Options market transactions can be complex; the purpose of the Intellicator Analytic Tool is to distill options data into a form that will help investors understand options market movements and provide them with actionable insight in changing market conditions. The Intellicator Analytic Tool will offer three increasingly sophisticated levels of analysis. The first level, the Single-Factor Analytic Bundle, calculates fundamental measures, or "factors," of options market activity—Put/Call Ratio, Moneyness Ratio, Volume-Weighted Implied Volatility, Volume-Weighted Average Delta, and Weighted Average Strike Price—and applies those factors to certain segments of activity on the Exchange. The second level, the Single-Factor Intellicator, uses

³ A separate filing will address the pricing for the Intellicator Analytic Tool, which will also be implemented on September 15, 2017, if approved by the Commission.

machine learning—an analytical technique that employs algorithms that iteratively “learn” from data to find hidden insights without explicit programming—to summarize in a single numeral the information contained within a Single-Factor Analytic Bundle. The third level, the Multi-Factor Intellicator, uses machine learning to summarize in a single numeral all of the information contained within all of the five Single-Factor Analytic Bundles offered with this product.

These three levels will be available for purchase separately or together to allow investors to choose the tool that best fits their needs (as previously noted, the fee schedule for the Intellicator Analytic Tool will be included in a future filing). The most distilled features such as the Single-Factor or Multi-Factor Intellicators are likely to be useful for retail investors, while the raw calculations available in the Single-Factor Analytic Bundle are designed to be useful to sophisticated investors to build customized models of market sentiment or for use as inputs to trading models. The Intellicator Analytic Tool is designed to increase visibility into options transactions and democratize information to provide the benefits of sophisticated analytical techniques to firms without the technology, staff or wherewithal to conduct a comparable analysis on their own.

Each level is described in further detail below.

Single-Factor Analytic Bundle

A Single-Factor Analytic Bundle is a set of five calculations of a single factor⁴ for a segment of the market. These five factors are:

⁴ As explained above, a factor is a fundamental measure of market activity.

- (i) Put/Call Ratio: The total number of put contracts traded divided by the total number of put and call contracts traded within a specific time interval for each underlying symbol.
- (ii) Moneyness Ratio: The natural log of the ratio of the price of the underlying equity to the strike price of the options contract traded within a specific time interval.⁵
- (iii) Volume-Weighted Implied Volatility: A calculation of the implied volatility of the options contracts traded within a specific time interval, weighted by the number of contracts traded.
- (iv) Volume-Weighted Average Delta: A calculation of the projected change to an option price given a \$1 change in the equity price, weighted by the number of contracts traded within a specific time interval.
- (v) Weighted Average Strike Price: A calculation of the strike price of the options contracts traded within a given time interval weighted by the number of days to expiration.⁶

These five factors will be applied to segments of the options market identified as having the strongest relationship with equity prices. Examples of such segments include: “Customers⁷ who buy to open a new position,” “Non-Customers⁸ who sell to close an

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⁶ A higher weighting is given to contracts near expiration.

⁷ The term “Customer” applies to any transaction that is identified by a member or member organization for clearing in the Customer range at The Options Clearing Corporation (“OCC”) which is not for the account of a broker or dealer or for the account of a “Professional” (as that term is defined in Rule 1000(b)(14)).

existing position,” or “Market Makers⁹ engaging in complex orders.” Segments may also be compared with each other to determine the direction of equity prices. For example, the prices of simple orders¹⁰ may be compared to those of complex orders,¹¹ the prices of options contracts with less than 7 days to expiration may be compared to those with less than 30 days to expiration, or the prices of options contracts that are in-the-money¹² may be compared to those that are out-the-money¹³ or at-the-money.¹⁴ The goal of all of these comparisons is to glean information from price differences that may be useful in determining the price direction of the associated equity.

Segments are expected to change over time as the Exchange refines its analysis of the relationship between particular options market segments and equity prices. Indeed, change is a feature of the product: the Intellicator Analytic Tool is intended to evolve

⁸ A “Non-Customer” is any market participant other than a Customer or a Market Maker, such as Professional Customer, Firm, Broker-Dealer, or Joint Back Office (as defined below).

⁹ “Market Makers” includes Specialists (see Exchange Rule 1020(a)), Registered Option Traders (see Exchange Rule 1014(b)), Streaming Quote Traders (see Exchange Rule 1014(b)(ii)(A)), and Remote Streaming Quote Traders (see Exchange Rule in 1014(b)(ii)(B)).

¹⁰ A single-leg option order.

¹¹ A multi-legged option order.

¹² An options contract is in-the-money when the strike price is below 2.5% of the price of the underlying security for a call contract, or above 2.5% of the underlying security for a put contract.

¹³ An options contract is out-the-money when the strike price is above 2.5% of the price of the underlying security for a call contract, or below 2.5% of the underlying security for a put contract.

¹⁴ An options contract is at-the-money when the strike price is within 2.5% of the price of the underlying security, either above or below, for either a call or a put contract.

over time based on the latest data, machine learning, and analytical techniques. Each Single-Factor Analytic Bundle will contain factor calculations for between five and fifty market segments; the precise number will be based on an analysis of the optimum number and type of segments required for the analysis.

Each segment will be constructed using the following fields, taken from both buy- and sell-side transaction information:

- (i) Electronic vs. floor transaction;
- (ii) Buy vs. sell;
- (iii) Opening vs. closing a position;
- (iv) Customer type (Customer, Professional Customer,¹⁵ Firm,¹⁶ Broker-Dealer,¹⁷ Market Maker, Joint Back Office (“JBO”),¹⁸ or off-floor broker-dealer);
- (v) Execution type (simple order, complex order, price improvement (“PIXL”) Order,¹⁹ qualified contingent cross (“QCC”),²⁰ Sweep,²¹ responder to an auction, or quote from a Market Maker);

¹⁵ The term “Professional Customer” applies to transactions for the accounts of Professionals, as defined in Exchange Rule 1000(b)(14).

¹⁶ The term “Firm” applies to any transaction that is identified by a member or member organization for clearing in the Firm range at the OCC.

¹⁷ The term “Broker-Dealer” applies to any transaction which is not subject to any of the other transaction fees applicable within a particular category.

¹⁸ The term “Joint Back Office” or “JBO” applies to any transaction that is identified by a member or member organization for clearing in the Firm range at OCC and is identified with an origin code as a JBO. A JBO participant is a member, member organization or non-member organization that maintains a JBO arrangement with a clearing broker-dealer (“JBO Broker”) subject to the requirements of Regulation T, Section 220.7 of the Federal Reserve System as discussed at Exchange Rule 703.

- (vi) Liquidity type (adding or removing liquidity, or not applicable); and
- (vii) Limit vs. market order.

Market segments may also be identified using standard transaction information, such as date, time, symbol for the underlying security, security type (index, equity, or ETF), option symbol, expiration date, strike price, put vs. call, series type (standard vs. non-standard),²² number of contracts traded, and the trading price of the option and the underlying equity.

Calculations will be based on “rolling aggregates” of trading data, updated every 60 seconds over the course of the day.

Single-Factor Intellicators

A Single-Factor Intellicator uses machine learning to summarize in a single numeral the information contained within a Single-Factor Analytic Bundle. The calculation for the Single-Factor Intellicator will change over time, as machine learning algorithms use data to learn about the relationship between options and equities, and modify the calculation accordingly.

Calculations for Single-Factor Intellicators, like calculations for each factor, will be updated every 60 seconds over the course of the day.

Multi-Factor Intellicator

¹⁹ A two-sided order that is entered into a price improvement auction.

²⁰ A stock-tied option order consisting of a minimum of 1,000 options contracts bundled together for the purpose of crossing the order.

²¹ An order type used to accumulate a position quickly by simultaneously sending the order to multiple exchanges.

²² Standard options contracts expire on the third Friday of every month; non-standard contracts do not.

The Multi-Factor Intellicator uses machine learning to summarize in a single numeral all of the calculations contained in all of the five Single-Factor Analytic Bundles. The Multi-Factor Intellicator will also be updated every 60 seconds over the course of the day.

Proposed Pricing Structure

As previously noted, the fee schedule for the Intellicator Analytic Tool will be included in a future filing.

2. Statutory Basis

The Exchange believes that its proposal is consistent with Section 6(b) of the Act,²³ in general, and furthers the objectives of Section 6(b)(5)²⁴ of the Act in particular. The proposal is designed 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 by prompting transparency and increasing visibility into options transactions and democratizing information to provide the benefits of sophisticated analytical techniques to firms without the technology, staff or wherewithal to conduct a comparable analysis on their own.

In adopting Regulation NMS,²⁵ the Commission granted SROs and broker-dealers increased authority and flexibility to offer new and unique market data to the public. It was believed that this authority would expand the amount of data available to consumers, and also spur innovation and competition for the provision of market data. The

²³ 15 U.S.C. 78f(b).

²⁴ 15 U.S.C. 78f(b)(5).

²⁵ See Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496 (June 29, 2005) (“Regulation NMS Adopting Release”).

Intellicator Analytic Tool—a new market data product designed to analyze options market transactions and synthesize that analysis to help investors assess the equities underlying those transactions—is the type of market data product that the Commission envisioned when it adopted regulation NMS. The Commission concluded that Regulation NMS—deregulating the market in proprietary data—would further the Act’s goals of facilitating efficiency and competition:

[E]fficiency is promoted when broker-dealers who do not need the data beyond the prices, sizes, market center identifications of the NBBO and consolidated last sale information are not required to receive (and pay for) such data. The Commission also believes that efficiency is promoted when broker-dealers may choose to receive (and pay for) additional market data based on their own internal analysis of the need for such data.²⁶

By removing unnecessary regulatory restrictions on the ability of exchanges to sell their own data, Regulation NMS advanced the goals of the Act and the principles reflected in its legislative history.

In NetCoalition v. Securities and Exchange Commission²⁷ (“NetCoalition”) the D.C. Circuit upheld the Commission’s use of a market-based approach in evaluating the fairness of market data fees against a challenge claiming that Congress mandated a cost-based approach.²⁸ As the court emphasized, the Commission “intended in Regulation NMS that ‘market forces, rather than regulatory requirements’ play a role in determining the market data . . . to be made available to investors and at what cost.”²⁹ “No one disputes that competition for order flow is ‘fierce.’ . . . As the SEC explained, ‘[i]n the

²⁶ Id.

²⁷ NetCoalition v. SEC, 615 F.3d 525 (D.C. Cir. 2010).

²⁸ See NetCoalition, at 534 - 535.

²⁹ Id. at 537.

U.S. national market system, buyers and sellers of securities, and the broker-dealers that act as their order-routing agents, have a wide range of choices of where to route orders for execution’; [and] ‘no exchange can afford to take its market share percentages for granted’ because ‘no exchange possesses a monopoly, regulatory or otherwise, in the execution of order flow from broker dealers’”³⁰

Data products such as the Intellicator Analytic Tool are a means by which exchanges compete to attract order flow. To the extent that exchanges are successful in such competition, they earn trading revenues and also enhance the value of their data products by increasing the amount of data they provide. The need to compete for order flow places substantial pressure upon exchanges to keep their fees for both executions and data reasonable.³¹

B. Self-Regulatory Organization’s Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act. Indeed, the Exchange believes that the Intellicator Analytic Tool enhances competition by increasing transparency into options transactions and democratizing information to provide the benefits of sophisticated analytical techniques to firms without the technology, staff or wherewithal to conduct a comparable analysis on their own.

The market for data products is extremely competitive and firms may freely choose alternative venues and data vendors based on the aggregate fees assessed, the data

³⁰ Id. at 539 (quoting Securities Exchange Act Release No. 59039 (December 2, 2008), 73 FR 74770, 74782-83 (December 9, 2008) (SR-NYSEArca-2006-21)).

³¹ See Sec. Indus. Fin. Mkts. Ass’n (SIFMA), Initial Decision Release No. 1015, 2016 SEC LEXIS 2278 (ALJ June 1, 2016) (finding the existence of vigorous competition with respect to non-core market data).

offered, and the value provided. Numerous exchanges compete with each other for listings, trades, and market data itself, providing virtually limitless opportunities for entrepreneurs who wish to produce and distribute their own market data. Transaction execution and proprietary data products are complementary in that market data is both an input and a byproduct of the execution service. In fact, market data and trade execution are a paradigmatic example of joint products with joint costs. The decision whether and on which platform to post an order will depend on the attributes of the platform where the order can be posted, including the execution fees, data quality and price. Without trade executions, exchange data products cannot exist. Moreover, data products, including the Intellicator Analytic Tool, are valuable to many end users only insofar as they provide information that end users expect will assist them or their customers in making trading decisions.

The costs of producing market data include not only the costs of the data distribution infrastructure, but also the costs of designing, maintaining, and operating the exchange's transaction execution platform and the cost of regulating the exchange to ensure its fair operation and maintain investor confidence. The total return that a trading platform earns reflects the revenues it receives from both products and the joint costs it incurs. Moreover, the operation of the exchange is characterized by high fixed costs and low marginal costs. This cost structure is common in content distribution industries such as software, where developing new software typically requires a large initial investment (and continuing large investments to upgrade the software), but once the software is developed, the incremental cost of providing that software to an additional user is typically small, or even zero (e.g., if the software can be downloaded over the internet

after being purchased).³² It is costly to build and maintain a trading platform, but the incremental cost of trading each additional share on an existing platform, or of distributing an additional instance of data, is very low. Market information and executions are each produced jointly (in the sense that the activities of trading and placing orders are the source of the information that is distributed) and are each subject to significant scale economies.

Competition among trading platforms can be expected to constrain the aggregate return each platform earns from the sale of its joint products. The level of competition and contestability in the market is evident in the numerous alternative venues that compete for order flow, including SRO markets, as well as internalizing BDs and various forms of alternative trading systems (“ATs”), including dark pools and electronic communication networks (“ECNs”). Each SRO market competes to produce transaction reports via trade executions, and two FINRA-regulated TRFs compete to attract internalized transaction reports. It is common for BDs to further and exploit this competition by sending their order flow and transaction reports to multiple markets, rather than providing them all to a single market. Competitive markets for order flow, executions, and transaction reports provide pricing discipline for the inputs of proprietary data products. The large number of SROs, TRFs, BDs, and ATs that currently produce proprietary data or are currently capable of producing it provides further pricing discipline for proprietary data products. Each SRO, TRF, ATs, and BD is currently permitted to produce proprietary data products, and many currently do or have announced

³² See William J. Baumol and Daniel G. Swanson, “The New Economy and Ubiquitous Competitive Price Discrimination: Identifying Defensible Criteria of Market Power,” Antitrust Law Journal, Vol. 70, No. 3 (2003).

plans to do so, including Nasdaq, NYSE, NYSE MKT, NYSE Arca, and the BATS exchanges.

In this case, the proposed rule change enhances competition by introducing a new product that increases transparency into options transactions and democratizes information by providing the benefits of sophisticated analytical techniques to firms without the technology, staff or wherewithal to conduct a comparable analysis on their own. If the Intellicator Analytic Tool were to become unattractive, those firms would opt not to purchase the product. As such, the Exchange does not believe that the proposed changes will impair competition in the financial markets.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received from Members, Participants, or Others

No written comments were either solicited or received.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Within 45 days of the date of publication of this notice in the Federal Register or within such longer period (i) as the Commission may designate up to 90 days of such date if it finds such longer period to be appropriate and publishes its reasons for so finding or (ii) as to which the Exchange consents, the Commission shall: (a) by order approve or disapprove such proposed rule change, or (b) institute proceedings to determine whether the proposed rule change should be disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic comments:

- Use the Commission's Internet comment form (<http://www.sec.gov/rules/sro.shtml>); or
- Send an e-mail to rule-comments@sec.gov. Please include File Number SR-Phlx-2017-62 on the subject line.

Paper comments:

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street, NE, Washington, DC 20549-1090.

All submissions should refer to File Number SR-Phlx-2017-62. This file number should be included on the subject line if e-mail is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (<http://www.sec.gov/rules/sro.shtml>).

Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street, NE, Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly.

All submissions should refer to File Number SR-Phlx-2017-62 and should be submitted on or before [insert date 21 days from publication in the Federal Register].

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.³³

Eduardo A. Aleman
Assistant Secretary

³³ 17 CFR 200.30-3(a)(12).

EXHIBIT 5

Deleted text is [bracketed]. New text is underlined.

NASDAQ PHLX Rules

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NASDAQ PHLX LLC Pricing Schedule

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IX. Proprietary Data Feed Fees

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Intellicator Analytic Tool

(a) The Intellicator Analytic Tool shall consist of the following components:

(1) “Single-Factor Analytic Bundles,” which shall mean baskets of calculations of fundamental measures, or “factors,” of options market activity; each Single-Factor Analytic Bundle will contain calculations for one of the following five factors:

(A) “Put/Call Ratio,” a ratio between put and call options contracts traded within a specific time interval;

(B) “Moneyness Ratio,” a ratio of the price of the underlying equity to the strike price of the options contract within a specific time interval;

(C) “Volume-Weighted Implied Volatility,” a calculation of the implied volatility of the options contracts traded within a specific time interval, weighted by the number of contracts traded;

(D) “Volume-Weighted Average Delta,” a calculation of the projected change to an option price given a \$1 change in the equity price, weighted by the number of contracts traded within a specific time interval; and

(E) “Weighted Average Strike Price,” a calculation of the strike price of options contracts traded within a given time interval, weighted by the number of days to expiration.

(2) An “Intellicator,” which shall mean a numeral that synthesizes calculations from an Analytic Bundle in a manner designed to capture various aspects of the relationship between trading in options and the value of underlying equity instruments. An Intellicator uses machine learning algorithms to adjust the calculation based on new data or improved analytical techniques. Each Single-Factor Analytic Bundle will have a Single-Factor Intellicator associated with it to summarize the data contained within that Bundle. All Single-Factor Analytic Bundles together will have a Multi-Factor Intellicator that will summarize the data contained within all of the Single-Factor Analytic Bundles combined.

(b) Calculations for the Intellicator Analytic Tool shall be updated at 60 second intervals over the course of a trading day.

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