

May 31, 2020

Ms. Vanessa Countryman
Secretary
U.S. Securities and Exchange Commission
100 F Street NE
Washington DC 20549-1090

Re: Market Data Infrastructure Proposed Rule (Release No. 34-88216; File No. S7-03-20)

Dear Ms. Countryman:

McKay Brothers LLC (“McKay”) and its affiliate Quincy Data LLC (“Quincy”) (collectively, the “Firm”)¹ appreciate the opportunity to comment on the Commission’s Market Data Infrastructure proposal (“Proposal”).² The Proposal sets forth substantial amendments to the content of consolidated market data and the means by which consolidated market data would be distributed to market participants. Specifically, consolidated market data would be expanded to include, among other things, five levels of depth-of-book data away from a protected quotation, which would be delivered to the public through competing consolidators rather than exclusive securities information processors (“SIPs”). Additionally, NMS stocks would have round lot quantities that vary based on the average closing price of the security during the preceding month of trading.

The Firm strongly supports a shift from the distribution of consolidated market data via exclusive SIPs toward a competing consolidator model. The Firm has long believed that technological advancements since the adoption of Regulation NMS, such as wireless technology, should be employed to provide more timely and useful consolidated market data to the public. The absence of competition in the delivery of consolidated market data has created a market structure where many broker-dealers believe they cannot trade competitively or provide best execution to their customers without also subscribing to exchanges’ proprietary data feeds.³ This absence has in turn undermined the central goals of the national market system of assuring the “fairness and usefulness of the form and content” of consolidated market data to provide “prompt, accurate, [and] reliable” access on “fair and reasonable terms.”⁴

¹ Quincy is a market data distributor that provides equal access to low latency US equities market data that helps subscribers make tighter markets. McKay is a telecom service provider, using microwave and fiber technologies to offer low-latency data transport services, which likewise allows our subscribers to manage risk more effectively and make tighter markets. We offer services on a level-playing field basis—meaning we make our best latencies available to all subscribers. We also provide small firm discounts to support greater diversity of market participants with access to low latency market data.

² Securities Exchange Act Release No. [88216](#), 85 FR 16726 (Mar. 24, 2020).

³ *Id.* at 16731-32 (noting many market participants view that “they need the more content-rich proprietary data feeds and low latency connectivity to provide best execution to their clients and to competitively participate in the markets.”).

⁴ 15 U.S.C. 78k-1(c)(1).

As the current operator of a system of low latency wireless networks between and among the major exchange data centers for distributing market data and sending order-related messages, the Firm is interested in becoming a competing consolidator provided that a level playing field and fair competition can be assured pursuant to proposed Rule 603(b). In order to effectively enhance the distribution of consolidated market data, we offer the following comments to highlight particular aspects of the Proposal that we believe are essential to its success as well as certain items for which additional guidance from the Commission would be helpful.

This letter first discusses in Part I the significance of establishing a level playing field by ensuring fair and equal access to exchanges and the need to extend these principles to the legs of the market data distribution system over which an exchange (or an exchange affiliate) may exercise direct or indirect control. Part II requests confirmation that a competing consolidator could provide multiple consolidated market data feeds at various data centers. Our recommendations, which are described in further detail below, can be briefly summarized as follows:

1. *Adopt a Competing Consolidator Model* – The Commission should adopt a competing consolidator model to improve the distribution of consolidated market data.
2. *Level Playing Field* – An exchange should represent or be able to represent that the exchange and its affiliates have not directly or indirectly facilitated any advantage for certain market participants or imposed any limitation on competition over any leg of market data distribution.
3. *Latency Neutralization* – Because exchanges may have different data center structures, the requirement that exchanges neutralize latency within their data centers pursuant to proposed Rule 603(b) should extend to any leg of market data distribution over which it or its affiliates exercise direct or indirect control.
4. *Replicating a Means of Access* – The Proposal should make clear that, to the extent there is an advantaged means of access to market data from an exchange, competing consolidators and self-aggregators must be able to replicate that advantage with their own equipment and not merely have the ability to subscribe to an advantaged means of access established by an exchange.
5. *Providing Multiple Consolidated Market Data Feeds* – The Proposal would benefit from greater clarity on the ability of a competing consolidator to provide consolidated market data feeds at various data centers.

I. Creating a Level Playing Field in the Access to Exchange Market Data

The Firm believes that the most important component of the Proposal for the success of a competing consolidator model is to ensure that all market participants have the opportunity for equal access within the facilities of an exchange⁵ for the purposes of receiving market data from

⁵ 15 U.S.C. 78c(a)(2) (defining the term “facility”). The Commission should consider issuing interpretive guidance related to what constitutes a facility of an exchange to provide additional clarity and avoid circumstances, as has recently arisen in connection with a proposed rule change by NYSE Group, Inc. exchanges, whereby an exchange might claim that an on-premises pole exclusively used by its affiliate is not a facility or that the roof of an

the exchange, transmitting that market data out of the exchange, and receiving and distributing market data from another exchange (*e.g.*, to receive and deliver an away exchange’s market data to a colocated subscriber). Ensuring equal and fair access requires that exchanges do not use their control or influence over their data centers to favor certain market participants over others. Without creating a level playing field by ensuring the opportunity for equal access for both egress and ingress within exchange datacenters, the benefits of enhanced competition through a competing consolidator model cannot be fully realized. Indeed, the economic incentive to launch a consolidated market data feed and become a competing consolidator may not be sufficient without such equal access.

Creating a Level Playing Field Through Proposed Rule 603(b)

Under the Proposal, exchanges would be required pursuant to proposed Rule 603(b) to enable competing consolidators and self-aggregators to access exchange quotations and transaction data, including data necessary to generate consolidated market data, in the same manner and in the same format as the exchange makes any quotation or transaction information in NMS stocks available to any person.⁶ Guidance from the Proposal further provides that this requirement means that “all connectivity options including colocation, must be available to all market participants whether they are purchasing proposed consolidated market data or proprietary data.”⁷ Commission guidance also makes clear that “exchanges would not be permitted to provide their NMS information necessary to generate consolidated market data in a faster manner to any affiliate exchange, a subsidiary or other affiliate that operates as a competing consolidator or a subsidiary or affiliate that competes in the provision of proprietary data,” and “proposed Rule 603(b) would require that all access options be provided in a latency-neutralized manner such that all participants within the exchange’s data center—such as

exchange’s data center would not be a facility. *See e.g.*, Exchange Act Release No. 88168, 85 FR 8938 (Feb. 18, 2020) (SR-NYSE-2020-05) and Letter from Elizabeth K. King, General Counsel and Corporate Secretary, NYSE, to Vanessa Countryman, Secretary, Commission, re: File No. SR-NYSE-2020-05 (May 8, 2020) <https://www.sec.gov/comments/sr-nyse-2020-05/srnyse202005-7168807-216593.pdf> (arguing that a pole exclusively reserved for use by its affiliate ICE Data Services (“IDS”) is not a facility because the pole is owned and operated by IDS and is not used for effecting or reporting a transaction, notwithstanding that market participants receive market data and submit orders through equipment placed on that pole). There must be some rational conception of what constitutes an exchange’s facility, and exchanges cannot merely outsource operation of critical parts of their exchange infrastructure to avoid subjecting such components to the rule filing process and the requirements of the Exchange Act. *See* Letter from Jim Considine, Chief Financial Officer, McKay Brothers LLC to Vanessa Countryman, Secretary, Commission (Mar. 10, 2020) <https://www.sec.gov/comments/sr-nyse-2020-05/srnyse202005-6950634-212524.pdf> (detailing numerous flaws in NYSE’s claim that wireless services provided by IDS are not a facility of the NYSE exchanges).

⁶ Proposed Rule 603(b) provides specifically that self-regulatory organizations (“SROs”) that trade NMS stock “make available to all competing and self-aggregators its information with respect to quotations for and transactions in NMS stocks, including all data necessary to generate consolidated market data, in the same manner and using the same methods, including all methods of access and the same format, as such national securities exchange or national securities association makes available any information with respect to quotations for and transactions in NMS stocks to any person.” Proposal at 16869-70.

⁷ *Id.* at 16770.

proprietary data subscribers, competing consolidators, and self-aggregators— would receive the data at the same time, regardless of their location or status within the data center.”⁸

Proposed Rule 603(b) and the guidance cited above undergirds the concept of a level playing field for consolidated market data distribution and sets forth three key principles: (1) exchanges must allow all market participants access to the same options for connectivity and cannot limit access to the exchange market data; (2) exchanges cannot favor their services or those of an affiliate or partner in the distribution of market data; and (3) within an exchange’s data center, market participants should have equal access to receive market data.⁹ Codifying these principles in the new equity market data infrastructure is imperative to provide the open and fair competition necessary for an effective competing consolidator model.

Today, some exchanges compete with other wireless service providers, such as the Firm, in the distribution of market data and provision of low-latency connectivity to and from their trading systems. Some exchanges compete indirectly through an affiliate or through the selection of a preferred wireless service vendor. However, since exchanges control their respective data centers, they control the points of information entry and exit to and from their systems (*e.g.*, matching engines, connectivity rooms, “last mile” cross connects), and are uniquely positioned to tip the scales in their own favor against competitors. Some exchanges have used this control to establish a faster means of connectivity for order messages and for market data, such as by establishing an exclusive connection to the exchange on the rooftop of the exchange’s data center or to a private pole closer in geographic proximity to the exchange.¹⁰

For example, in 2013, The Nasdaq Stock Market LLC (“Nasdaq”) received approval to place wireless equipment for a single provider on the roof of its datacenter in Carteret, New Jersey.¹¹ The firm believes this rooftop connection to the Nasdaq datacenter continues to enjoy a geographic latency advantage over all other forms of connectivity to Nasdaq. The exchange justified this exclusive advantage by arguing that it would quickly run out of space if it allowed other providers to place wireless equipment on the roof of its datacenter and that the rooftop connection was “at the same or similar speed” to other connections, so the advantage did not

⁸ *Id.* at 16770-71.

⁹ We note that an equally important aspect of proposed Rule 603(b) is that it would require that a competing consolidator or self-aggregator must be able to access market data, including market data necessary to generate consolidated market data, through in the same manner and using the same methods, as the exchange makes market data available to any person. Critically, this would prevent an exchange from creating a proprietary data feed that would not be sufficient to create consolidated market data but which has a latency or other access advantage associated with it.

¹⁰ *See e.g.*, Exchange Act Release No. [68735](#), 78 FR 6842 (Jan. 31, 2013) (SR-NASDAQ-2012-119) (permitting a single wireless network provider to operate on the roof of The Nasdaq Stock Market LLC’s datacenter in Mahwah); *see also* Letter from Thomas M. Merritt, Deputy General Counsel, Virtu, to Brett Redfearn, Director, Division of Trading and Markets, SEC, re: NYSE Mahwah Roof (June 25, 2019), <https://www.sec.gov/comments/4-729/4729-5880550-188760.pdf> (describing recent initiatives by NYSE to place wireless equipment on the roof of its data center) *and* Letter from Jim Considine, Chief Financial Officer, McKay Brothers LLC, to Vanessa Countryman re: SR-NYSE-2020-05, <https://www.sec.gov/comments/sr-nyse-2020-05/srnyse202005-6950634-212524.pdf> (describing the use by New York Stock Exchange LLC of a private pole on the premises of the Mahwah data center with a geographic latency advantage over public poles).

¹¹ *See* Exchange Act Release No. [68735](#), 78 FR 6842 (Jan. 31, 2013) (SR-NASDAQ-2012-119).

burden competition.¹² Nasdaq further argued that the rooftop connection did not unfairly discriminate against market participants that did not use or choose to use the rooftop connection because all market participants were free to use the latency-advantaged rooftop connection.¹³

These structural advantages arising from an exchange's control over its datacenter unfairly discriminate against those without such advantage and do not facilitate fair and open competition. If exchanges are able to directly or indirectly determine the relative latency of different market participants, there will be no incentive for competing consolidators to operate, which will in turn negate the Commission's objectives under the Proposal by reducing market participant choice, dampening innovation, or otherwise curtailing competition. Self-aggregators and competing consolidators must be able to replicate any geographic or other latency advantage that an exchange might provide to itself, its affiliate, or a select provider. That is, if one competing consolidator or self-aggregator is provided a structural advantage that is facilitated directly or indirectly by the exchange or an affiliate of the exchange (*e.g.*, a rooftop connection or shorter connection to the exchange's trading systems), all other competing consolidators and self-aggregators must be able to replicate the advantage with their own equipment without any interference from the exchange.¹⁴

We believe that the Proposal would benefit from greater clarity on this point. If competing consolidators and self-aggregators cannot replicate an exchange-facilitated structural access advantage, the advantage should not be permitted to proceed or continue.

Applying the Principles of Equal Access to Market Data Distribution Infrastructure

To create a level playing field where competing consolidators and self-aggregators are ensured equal access to market data within exchange facilities pursuant to Rule 603(b), it is critical to understand the different legs of the journey that market data travels from an exchange's data distribution engine to market participants. As a threshold matter, it should be noted that many market participants receive market data by colocating equipment in exchange datacenters in New Jersey: (i) Mahwah for NYSE exchanges; (ii) Carteret for Nasdaq exchanges; (iii) Secaucus for Cboe exchanges; and (iv) Weehawken for IEX. This means, for example, that a market participant colocated in Mahwah would receive market data from each of the other

¹² *Id.* at 6844. Describing a latency advantage as "at the same or similar speed" does not provide sufficient detail to evaluate whether such advantage burdens competition or causes unfair discrimination. The magnitude of a latency advantage matters significantly. The Commission acknowledged as early as 2010 that even a microsecond can matter in effecting trading strategies. Securities Exchange Act Release No. 61358, 75 FR 3593. 3610 (Jan. 21, 2010) ("[s]peed matters both in the absolute sense of achieving very small latencies and in the relative sense of being faster than competitors, even if only by a microsecond.").

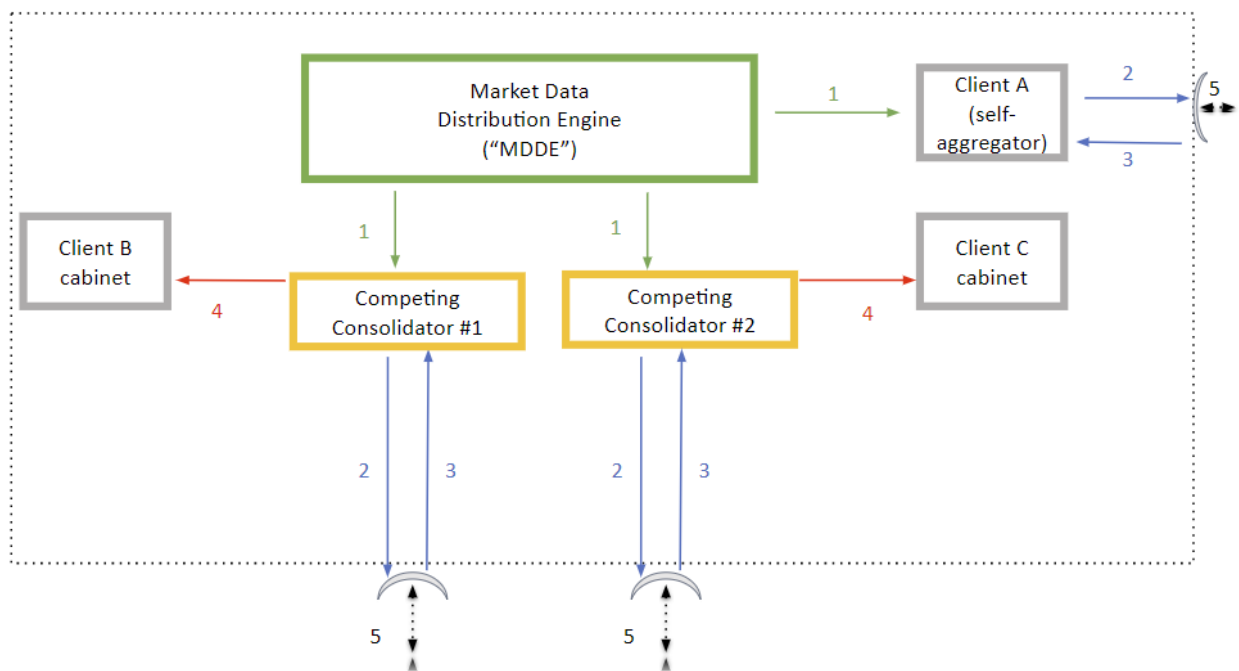
¹³ *Id.* at 6843.

¹⁴ The ability for market participants to be able to use an advantaged means of access (*e.g.*, by switching to use the Nasdaq rooftop connection from another wireless provider) does not render an advantaged means of access free from unfair discrimination. Market participants that choose not to use the advantaged means of access are unfairly discriminated against because they have a slower means of connectivity to the exchange for sending orders and receiving market data. *See e.g.*, Securities Exchange Act Release No. 44983 (Oct. 25, 2001), 66 FR 5525, 55233 (Nov. 1, 2001) (SR-PCX-00-25) ("advantages, such as greater access to information, improved speed of execution, or enhanced operational capabilities in dealing with the exchange might constitute unfair discrimination under the [Exchange] Act.").

exchange datacenters at its cabinet in Mahwah. Accordingly, establishing a level playing field requires not only that exchanges provide “latency-neutralized” access to locally produced data (*i.e.*, from the exchange in which a market participant is colocated), but also that exchanges do not interfere in the competition to provide inbound market data from another exchange.¹⁵

To illustrate, the five different legs of a market data’s journey through a competing consolidator to colocated subscribers/clients are set forth in the diagram below. The structure presented here, however, may vary depending on the particular exchange, as discussed in the next section below.

Exchange Data Center - General Structure



Below we explain these five legs and provide for each a description of what we believe should be the appropriate exchange obligation pursuant to proposed Rule 603(b):

1. **Initial Distribution Leg** – distribution from the exchange’s market data distribution engine to the cabinets of competing consolidator, self-aggregators, and any other direct recipients of market data.
 - a. Exchange Obligation: exchanges should be required to provide equal latency cross connects on equal terms from the market data distribution engine to these cabinets.
2. **Egress Leg** – distribution from the competing consolidator’s cabinet out of the exchange’s data center to wireless equipment or other connections (*e.g.*, fiber) to distribute externally to subscribers, including those colocated in another exchange data center.
 - a. Exchange Obligation: If an exchange or its affiliates are involved in any way in facilitating the means to exit/enter their facilities (cross connects, connectivity rooms, or

¹⁵ Proposal at 16771.

otherwise), this involvement should be clearly documented and the exchange should ensure that these connections are provided on equal terms with equal latency.

3. **Ingress Leg** – Upon receiving market data from an away exchange, the remotely-sourced market data must enter the exchange’s data center to be delivered to colocated customers.
 - a. Exchange Obligation: Same as Leg 2 (Egress Leg).
4. **Delivery to Subscriber Leg** – Once the market data from an away exchange is received at the competing consolidator’s cabinet, the competing consolidator delivers that market data to its subscriber’s cabinet within the exchange’s datacenter.
 - a. Exchange Obligation: Where an exchange or its affiliates are involved in the provision of cross connects between the cabinets of competing consolidators and the clients of competing consolidators (or among any colocated cabinets), the exchange should ensure that these connections are provided on equal terms and with equal latency.
5. **Transit Leg** – This is the leg where market data is sent from an exchange data center to be received at other exchange data centers and/or for distribution to non-colocated market participants.
 - a. Exchange Obligation: An exchange should represent or be able to represent that the exchange and its affiliates have not directly or indirectly facilitated any advantage for certain market participants or imposed any limitation on competition. This would include, for example, limiting the use of specific frequencies to select market participants.

We believe that the Proposal should make clear that latency neutralization, as described in the Proposal guidance cited above, must apply to any leg of a market data’s journey over which an exchange or its affiliate(s) exercises direct or indirect control.¹⁶ A narrow reading of Proposed Rule 603(b) and the related guidance might interpret equal access as only applying to Leg 1 (Initial Distribution) because the guidance does not explicitly contemplate an exchange’s distribution of an away exchange’s market data within its facilities. However, if, for example, an exchange were to provide a faster means of entry for market data received from an away exchange (*i.e.*, Legs 3 or 4) to certain competing consolidators but not others (*e.g.*, by providing a shorter connection to competing consolidators favored by the exchange), the exchange could engineer an unsurmountable latency advantage for the distribution of consolidated market data within its data center. It is therefore essential that the level playing field maxim of proposed Rule 603(b) extend to any legs of market data’s journey from an exchange’s market data distribution engine to the end receipt by a market participant over which an exchange or its affiliate(s) exercises direct or indirect control. We believe a latency tolerance of 1 nanosecond for neutralized connections is not difficult to implement or maintain, and will withstand a long test of time.

A Level Playing Field Should Be Required Where an Exchange Exercises Direct or Indirect Control

¹⁶ By “indirect control,” we mean any use of the exchange or its affiliates’ influence, weight, or pressure to create an advantage (or disadvantage) in exchange connectivity to select market participants. This could, for example, occur whereby an exchange reaches an informal understanding with the lessor of its data center that the lessor should grant an advantaged means of access to one market participant but not others. An exchange might exercise its influence through its affiliates or using third parties.

The Firm recognizes that exchanges may operate using different structures and may have more or less control over certain parts of their datacenter. In the diagram above, the dotted-line is intended to represent one example of the scope of an exchange's control over its datacenter. This dotted-line may be more or less expansive than as depicted above.¹⁷ For example, if an exchange controls (directly or indirectly) the towers adjacent to its property on which market participants may place their equipment to transmit market data for Leg 5 (Transit), the dotted line should be expanded to encompass the entire diagram. Other exchanges might only exercise direct or indirect control to market participant's cabinets within the datacenter, and the datacenter operator may be responsible for arranging Leg 2 (Egress) and Leg 3 (Ingress) connectivity to the distribution point for Leg 5 (Transit). Some exchanges may fall somewhere in between whereby market participants' wireless equipment may be on a pole not controlled directly or indirectly by the exchange adjacent to the datacenter, but the exchange might require that all lines of communication into the exchange-controlled portion of the data center must first go to a "meet me room."¹⁸ Thus, where the dotted line intersects with Legs 2 and 3, there may be a "meet me room" used and controlled by the exchange.

We have included as Appendix A (Cboe) and Appendix B (Nasdaq) examples of how we understand, to the best of our knowledge, these exchange data centers are structured. We note that we do not have complete information regarding all the components of these data centers and how these exchanges may operate them or exercise their influence with respect to varying forms of connectivity. The purpose of these examples is to illustrate how different data center structures may result in an exchange exercising, directly or indirectly, control over more or fewer legs of the market data distribution system. These examples also highlight how different exchange data center structures may facilitate an exchange's ability to advantage or disadvantage certain market participants over others in the distribution of market data depending on how it exercises its influence, contrary to the purposes of Rule 603(b).

In order to accommodate different exchange models and structures with respect to their data centers, we believe, as previously noted, that the level playing field principles of proposed Rule 603(b) should apply to any leg of a market data's journey over which an exchange (or its affiliates) exercises direct or indirect control or otherwise uses its influence to create a structures that advantage or disadvantage certain market participants over others. Where an exchange does not exercise direct or indirect control over one of the legs noted above (*e.g.*, a pole outside of an exchange's datacenter), the forces of competition can operate without concern that an exchange (or its affiliates) may use its control over its datacenter to favor certain market participants over others. This direct or indirect control could take many forms such as by requiring market participants to connect to a meet me room, specifying the types of cross connects that may be used, restricting the use of certain frequencies to certain market participants, through the use of one or more affiliates or select third parties to create these advantages, or pursuant to formal and

¹⁷ All exchanges would presumably control Leg 1 as these are lines of connectivity directly between market participants' cabinets and the market data distribution engine.

¹⁸ A "meet me room" (sometimes referred to as a "connectivity room") is an area in the data center where all the fiber cross connects terminate and are connected to each other. Data centers usually have well defined policies for establishing cross connects and have various denominations for these locations.

informal arrangements with the data center operator. To concretely measure compliance, an exchange should be able at all times to affirmatively represent that neither it nor its affiliates have exercised influence, directly or indirectly, to alter the level playing field for the distribution of any market data.¹⁹

The Nasdaq rooftop wireless connection described above, which granted space on the roof of the data center only to its partner wireless provider, is an instructive example. In that case, Nasdaq stated in a comment letter that it was Verizon, as the lessor of the Carteret facility at that time, who retained rights to the rooftop and had the authority to approve other wireless service providers for the placement additional wireless equipment on the roof.²⁰ Nasdaq noted, however, that any other wireless vendor seeking access to the roof would need to obtain approval from the lessor of the data center, “separate approval from the Federal Communication Commission and state and local authorities, as well as NASDAQ approval for fiber optic connectivity to NASDAQ’s telco connectivity room within the Carteret building.”²¹ In this case, the relevant inquiry would be whether Nasdaq has direct or indirect control over the data center operator’s decision to disallow other competitors to similarly place equipment on the roof.²² It seems to us that a data center operator would be economically incentivized to allow other market participants on the roof or to establish a new connectivity point closer to the exchange (*e.g.*, a pole adjacent to the data center).²³ Under this model, the proposed structure of Nasdaq’s Carteret facility could be allowed, provided that Nasdaq could truthfully represent that it and its affiliates, directly or indirectly, neither facilitated the exclusivity arrangement nor benefit from it.

The other potential regulatory approach to address this issue would be for the Commission to require an exchange, irrespective of the exchange’s current data center structure, to ensure that latency is neutralized on Legs 1 through 4 in the diagram above.²⁴ Under such a

¹⁹ At a minimum, the Commission could provide guidance that exchanges must represent in any rule filing that involves a latency advantage or other benefit that could impact competition for the receipt and delivery of consolidated market data that it has not exercised its influence directly or indirectly to provide such advantage and that the exchange and its affiliates would not directly or indirectly benefit from any such advantage or disadvantage. For example, if an exchange sought to provide an advantaged means of connectivity to its systems (*e.g.*, via the roof) that only a limited number of market participants could enjoy, this could be done provided the exchange does not use its influence to help determine who might have the opportunity to occupy such advantaged positions.

²⁰ Letter from Jeffrey S. Davis, V.P and Deputy General Counsel, Nasdaq, to Elizabeth Murphy, Secretary, Commission re: File No. SR-NASDAQ-2012-119, at 2 (Jan. 24, 2013), <https://www.sec.gov/comments/sr-nasdaq-2012-119/nasdaq2012119-2.pdf>.

²¹ *Id.*

²² Nasdaq acknowledges that it has direct control over cross connects to its connectivity room, so it would have to ensure latency neutralized connectivity from the roof to its connectivity room under this model.

²³ As it turns, out, despite a number of market participants, including the Firm, attempting multiple times to similarly place wireless equipment on the roof of the Carteret data center via Verizon as the lessor, no other market participant has yet been permitted to place wireless equipment on the roof. This might indicate direct (*e.g.*, pursuant to its lease agreement) or indirect control by Nasdaq over the lessor’s decision as to who (or how many firms) can place equipment on the roof. Any time there is an exclusive arrangement with a market participant or an exchange affiliate is involved, there should likely be inquiry as to whether the exchange influenced the action.

²⁴ Notably, however, an exchange would still need to be able to represent that it has not exercised its influence directly or indirectly to advantage certain market participants over others with respect to Leg 5 as well, such as by restricting the use of certain frequencies.

model, exchanges may be required to negotiate with the data center operator and any other third parties involved in the distribution of market data and exchange connectivity within the data center to ensure such service providers can meet these requirements on behalf of the exchange. This model would eliminate any potential ambiguity as to whether an exchange directly or indirectly controls one of the legs of market data distribution but has the disadvantage of potentially limiting permissible exchange data center structures. There is precedent for the success of this model. The Chicago Mercantile Exchange, Inc. (“CME”) provides co-location services “built around fair and equal access” at its data center in Aurora, IL.²⁵ CME did this by facilitating the data center owner’s construction of a tower adjacent to the data center with capacity for approximately 35 microwave dishes, each of which has equidistant connections to every colocated customer cabinet in the CME datacenter.²⁶

Fundamentally, these considerations relate to when and where competition begins for competing consolidators in providing consolidated market data. Competing consolidators need to then be able to get “out the door” of an exchange’s controlled space, usually its campus, on equal terms and “in the door” on equal terms to deliver an away exchange’s market data to colocated customers. Where exactly the “door” is may vary from exchange to exchange, as described above, but competition among competing consolidators begins once they are out the “door.” Thus, as a guiding principle, we believe that competition should begin when market data leaves those areas over which an exchange or its affiliate(s) exercises direct or indirect control and therefore has the ability to impact the relative latency of one market participant over another. Exchanges cannot favor any market participant in the provision of faster exit paths or entry paths into their facilities and the paths over which they exercise control should be latency neutralized.

II. Permissible Competing Consolidator Models (Multiple Colocated Consolidated Market Data Feeds)

The Proposal contemplates that there are likely to be multiple different national best bids and national best offers (“NBBOs”) at any given time as a result of different competing consolidators performing the function of consolidating and disseminating consolidated market data.²⁷ However, the Proposal does not explicitly acknowledge that there may be multiple different NBBOs produced by a single competing consolidator at different locations at any given point in time. The Firm believes that the Proposal should acknowledge this possibility to provide clarity to market participants that may be considering operating as competing consolidators.

As noted above, many market participants are colocated at one or more of the major exchange datacenters in New Jersey and receive their market data at such colocated points of presence. If a competing consolidator seeks to provide market participants with the fastest and

²⁵ See CME Group, FAQ: Data Center Sale Leaseback, available at <https://www.cmegroup.com/trading/colocation/faq-data-center-sale-leaseback.html>.

²⁶ See *id.* (“CME Group will maintain its policy of equidistant cross connects for CME Group Co-Location Services.”). In addition, while the Firm does not presently connect to IEX and therefore does not have specific knowledge of its exact structure, we generally understand that IEX is designed to have its members connect to a point-of-presence and neutralize latency for its members from a point-of-presence to IEX.

²⁷ See *e.g.*, Proposal at 16776. The Commission acknowledges that this occurs in today’s marketplace whereby many broker-dealers calculate their own NBBOs, so it should not raise new concerns under the Proposal.

most efficient consolidated market data possible, the result would be a slightly different NBBO at each exchange datacenter. The reason is the time required for market data updates to travel from the source data center to the receiving data centers. For example, the competing consolidator's service in Mahwah would receive market data from NYSE and its affiliates first, as they are sourced from within the Mahwah data center, while there would be some delay in receipt of the market data from Nasdaq and its affiliates data from Carteret as well as other exchange data from their respective source data centers. The same would be true for NYSE and NYSE Arca data at the other datacenters – *e.g.*, the consolidated feed in Carteret would receive market data from Nasdaq and its affiliates sooner than it could receive data from Mahwah, Secaucus, and other exchange locations.


The Proposal and proposed Form CC contemplate that competing consolidators might offer different market data products as well as varying co-location, connectivity, and related services but do not discuss separate colocated offerings from a single competing consolidator.²⁸ Although not addressed in the Proposal, such offerings would seem to be precisely the type of competitive offerings that the Commission expects to emerge from the Proposal for the benefit of investors. Accordingly, the Firm believes that the Proposal would benefit from greater clarity on whether such offerings would be permissible.

III. Conclusion

The Firm believes that a shift toward a competing consolidator model for the distribution of consolidated market data would greatly improve the efficiency and utility of consolidated market data. As detailed above, in order for the benefits of a competing consolidator model to be realized, it is critical that exchanges and their affiliates do not, directly or indirectly, exert their influence to advantage or disadvantage certain market participants over others. In addition, the Proposal would also benefit from greater clarification with respect to the permissibility of operating multiple consolidated market data feeds simultaneously at different exchange data centers.

Thank you for the opportunity to contribute to this important discussion. Please contact us with any questions at (312) 948-9188.

Sincerely,



Jim Considine
Chief Financial Officer
McKay Brothers, LLC

cc: The Hon. Jay Clayton, Chairman
The Hon. Hester M. Peirce, Commissioner

²⁸ Proposal at 16785.



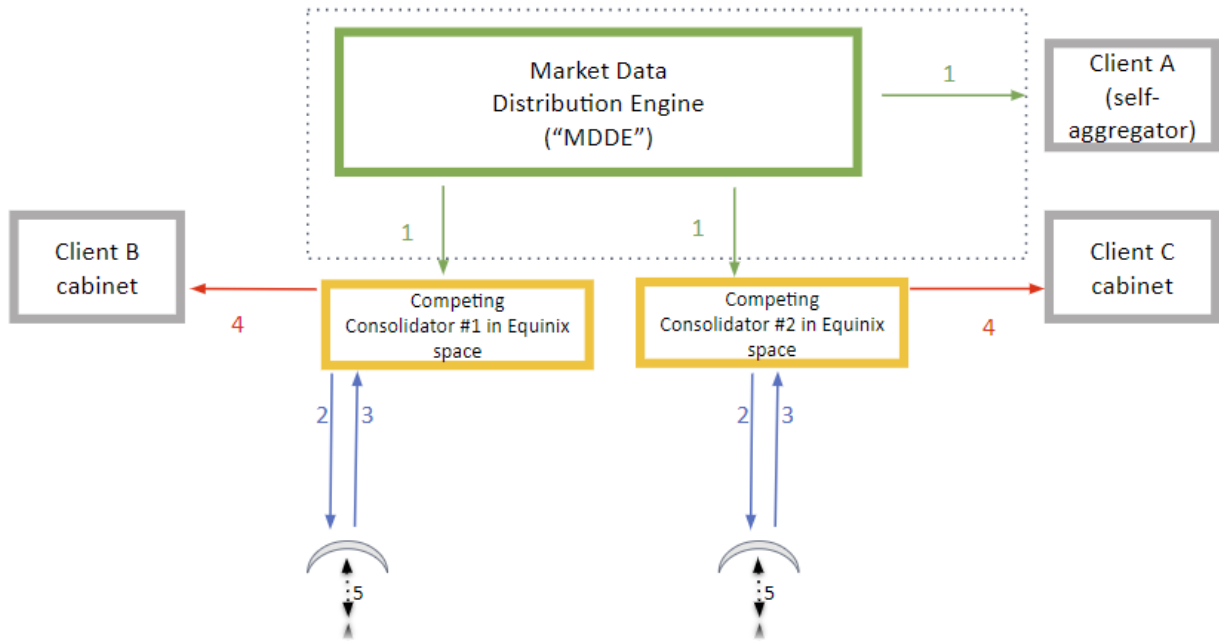
The Hon. Elad L. Roisman, Commissioner
The Hon. Allison Herren Lee, Commissioner

Mr. Brett Redfearn, Director, Division of Trading and Markets
Mr. Christian Sabella, Deputy Director, Division of Trading and Markets
Ms. Elizabeth Baird, Deputy Director, Division of Trading and Markets
Mr. David S. Shillman, Associate Director, Division of Trading and Markets
Mr. John Roeser, Associate Director, Division of Trading and Markets

S.P. Kothari, Director, Division of Economic and Risk Analysis

APPENDIX A

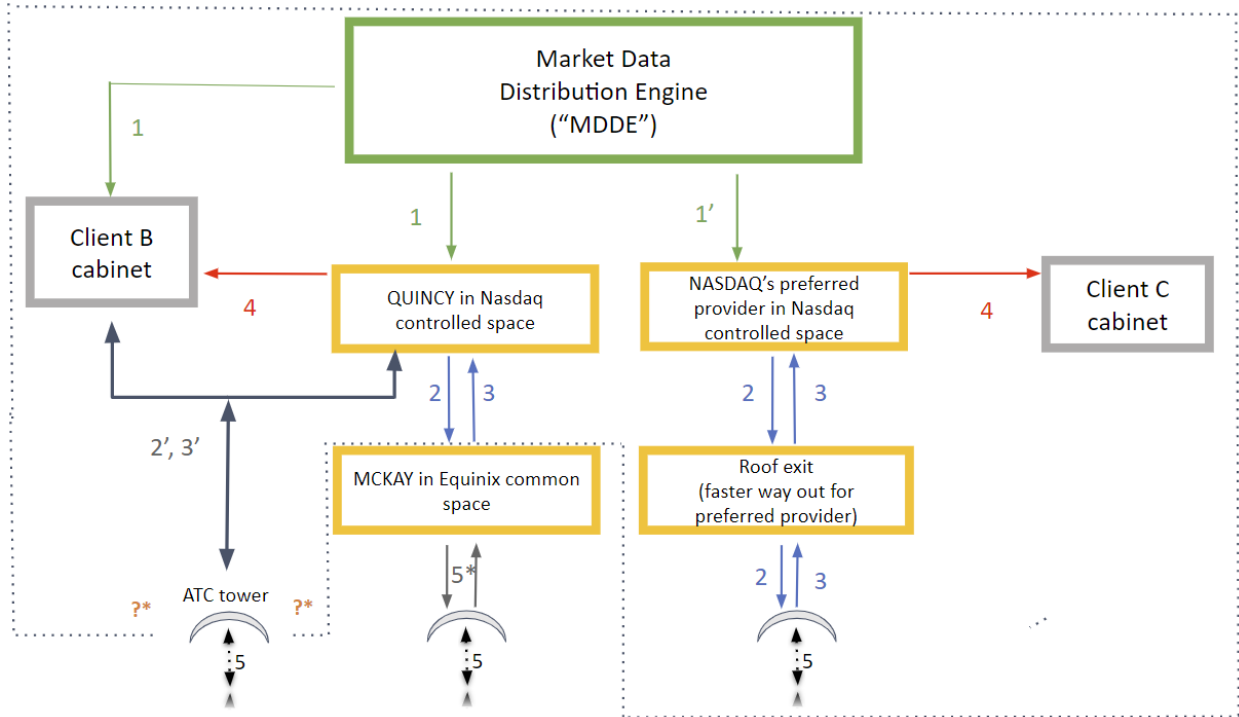
Cboe Data Center Structure



Legend	
1	To our knowledge, Cboe provides equal-latency cross connects on equal terms from its MDDE to direct recipients of its exchange market data within the exchange’s campus. Cboe has a policy stating that the distribution of market data is equalized to each interior customer cabinet within a number of buildings within the Secaucus data center campus, which is operated by Equinix. Cboe does not permit such an equal length cross connects to terminate at a customer cabinet on a data center roof.
2/3	To our knowledge, Equinix provides access to its roof on a commercial, non-preferential basis. We believe Cboe exerts no influence in the commercial relationships between its customers and its data center operator.
4	Cboe does not have a policy for cross connects between collocated cabinets. Equinix governs the policy for these cross connects. Pursuant to this policy, these cross connects are not all equalized, but we understand that there is no direct or indirect influence by the exchange. Market participants compete with each other for cabinets which best meet their needs.
5	Frequencies used for wireless connections are obtained by market participants without Cboe’s influence.

APPENDIX B

Nasdaq Data Center Structure



Legend

1,1'	To our knowledge, Nasdaq provides equal latency cross connects on equal terms from MDDE to direct recipients of its exchange market data at its data center, which is also operated by Equinix. It is unclear if this equal latency policy applies to its preferred provider.
2, 3, 2', 3'	Nasdaq equalizes customers' connections to the ATC tower (a tower located on the premises of the data center where most market participants connect) via a fiber connection that routes through a lengthy coil, adding additional latency. [We note that the Firm connects to Nasdaq through 5* to a separate pole adjacent to the data center because of the unnecessarily lengthy fiber connection between the ATC tower and the exchange's systems.]
4	We are not aware of any clearly documented equal latency policy regarding cabinet-to-cabinet connections inside the Nasdaq controlled space. If Nasdaq has such a policy, it is unknown if it applies to the preferred provider, which connects via the roof.
5	The frequencies should be obtained by providers without the involvement of the exchange.
5*	This leg represents the transmission of market data once it has exited Nasdaq's controlled space in the data center to the Firm's wireless equipment for dissemination at other locations. To our knowledge, the exit path out of the Equinix area is under the purview of Equinix and open to fair competition, and is therefore a Transit Leg.
?*	This gap in the dotted line is intended to illustrate a material gap in our understanding of the relationship between Nasdaq and the operator of the ATC tower. It is unclear to us if, and to what extent, the exchange has exercised direct or indirect control or otherwise influenced wireless connectivity from the on-premises ATC tower.