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Via Email

***Re: Alpha Exchange Inc. – Notice of Proposed Amendments and Request for Comments***

Scotiabank appreciates the opportunity to comment on the proposal by Alpha Exchange Inc. (“Alpha”) to (i) introduce two new order books on Alpha; (ii) make changes to Alpha’s order processing delay; and (iii) make other ancillary amendments (the “Proposal”).

**General Remarks**

We acknowledge that the Proposal is, at its core, designed to allow the TMX Group to create two new order types and advanced features which may attract institutional flows. The proposal draws directly from features available on the IEX marketplace in the US. The features would allow for orders to be re-priced within the book based on a number of different factors, at the discretion of TMX’s proprietary signals generated by the venue-operated machine learning model.

These proposals, including the introduction of two order books, present several challenges to accepted norms for the Canadian market. Our overarching concern is that the precedent-setting nature of this proposal could take Canadian equity trading in an unexpected and unforeseen direction. This issue is particularly acute given that marketplace feature proposals are subject to a short comment process and therefore lack the same rigour as changes to instruments which might carry comparable forward-looking implications.

Crucially, the proposal does not include any details on the pricing structure or amounts. We provide our comments below without this critical element to the proposal of this marketplace. Given the unknown pricing structure and potential degree of benefits to the investment community on a whole, we

analyze the Proposal and base our feedback and analysis on basic regulatory principles in Canada, including assessing whether the precedent set by the Proposal would be appropriate.

### **Random → Static Order Processing Delay**

An important element of the Proposal is the removal of the order processing delay randomization from the Alpha speed bump implementation. TMX Group argues that no amendments to the Alpha Rules are required for this change to take place, and TMX Group intends to proceed with this amendment notwithstanding other components of the Proposal.

The TMX Group argues that the randomization adds complexity and difficulties for participants using algorithms, and that the consensus on the street is to remove the randomization and move to a static delay. We do not believe this is uniform consensus. Removing the randomization may directly help firms who have built and deployed latency controlled routers, which are far from universally adopted in Canada. On the other hand, participants without such tools are left at a disadvantage in accessing liquidity on Alpha Exchange. This may be particularly harmful to smaller dealers, or those who rely on vendor-supplied smart order routers without latency-normalization capabilities.

Our view is that a fundamental change to the operating model for Alpha – including the randomization of order processing delays – should be subject to a higher standard than a unilateral decision by a marketplace operator subject to notice but not explicit regulatory approval. The nature of this change is far more complex than the implication of TMX Group's citation of "strong consensus" which is not evidenced in the Proposal. We ask that this aspect of the Proposal be subject to a more comprehensive public consultation with stakeholders.

### **New Order Books**

The TMX Group is proposing to create two new alternative, non-protected order books (Alpha-X and Alpha DRK) as a vehicle to implement these new order types. This would bring the number of equity related marketplaces in Canada up from 15 to 17. The addition of these two new marketplaces to our already crowded venue list comes with a number of considerations for the investment community.

- Additional overhead costs to brokers who need to setup & maintain their connectivity to these venues
- Further liquidity fragmentation, which is unlikely to be offset by an increase in the breadth of participation in the Canadian market.
- Added complexity to the Canadian market structure landscape, which broadly adds costs and overhead to the trading ecosystem.

While we encourage marketplaces to innovate and further optimize trading workflows by creating novel features, we don't believe that new order books are required in this case. In theory, having segregated venues for testing out new ideas and pushing innovation is a nice idea. The reality is the proliferation of new trading books in Canada continues to add to infrastructure, support and maintenance burdens for broker dealers that ultimately result in an increase in costs to the investment community. Further, creating new books may in fact hinder the adoption of new features because novel features on new marketplaces may require their own bootstrapping, instead of receiving the benefit of established order flow patterns and order handling practices that already touch existing marketplaces.

We oppose the launch of additional order books, including their implicit cost on market participants, solely to allow TMX Group to experiment with order types. We would encourage the TMX to continue to innovate and release these novel order types on their existing order books.

Specifically, we believe that both Smart Limit and Smart Peg can be implemented on the existing Alpha Exchange order book, particularly if the randomized speed bump is preserved (and potentially lengthened). If the Smart Limit or Smart Peg functionality is proven ineffective on the existing Alpha order book, then perhaps TMX Group may be justified in launching an additional order book – with strong evidence of its need, rather than conjecture over whether the feature set would be effective in practice.

### **Smart Limit & Quote Decay Signal**

The proposal includes a new order type – “Smart Limit” – which uses a proprietary signal (“TMX Quote Decay Signal” or “QDS”) which predicts quotes that are likely to imminently decay. This new order type will allow for orders to be re-priced away from the NBBO when the signal indicates that the quote is about to change adversely. The TMX Group argues that faster participants often fade their liquidity more quickly than slower participants in these conditions, and that the use of this new order type with the QDS will allow for other (slower) participants to achieve better execution by achieving better markouts on their passive fills. In other words, this order type allows slower participants to also fade their quotes – but only on the proposed Alpha-X marketplace.

While we applaud the TMX Group for innovating and developing a novel approach to the decaying quote problem, we do have a number of concerns about this order type in particular and the precedent it may set.

The Smart Limit order type is highly dependent on the TMX QDS which to our knowledge is built on a machine learning (ML) model. The signal generation and ML model itself poses several questions around suitability, model risk, and maintenance schedules.

The Smart Limit order type allows the marketplace to re-price orders sent to the order book at its discretion. In essence, the marketplace is now making a call on the market timing of when to re-price an order to improve execution quality. This action is typically reserved for the router or the algo strategy being used to trade that order. By allowing this action to be taken by the marketplace, TMX Group is further blurring the line between marketplace and dealer. In essence, Alpha Exchange would take order execution discretion, without any requirement to adhere to best execution policies & procedures – or accountability for failing to comply with a best execution standard. In fact, the dealer entering orders on the Alpha-X book would be subject to a best execution standard involving an order type they do not have a complete understanding of – because the QDS signal is fundamentally “black box” and relies on opaque machine learning techniques.

In a traditional algorithmic trading context, issues around algorithm malfunction or best execution concerns are addressed by dealers directly, and may include making clients whole on malfunctions. None of this is available to investors when the malfunction is at a marketplace, the marketplace is operating what amounts to a proprietary pegging algorithm, and the marketplace is not required to be capitalized adequately to account for the possibility of malfunction.

We acknowledge that there are times when trading venue have some discretion to re-price a limit order, typically related to an auction, risk protection mechanism or other participant-controlled order type. However, the Proposal would be the first time the venue would be responsible for re-pricing to improve execution quality based on a prediction being made by venue-controlled signal, with no transparency into the logic involved.

Finally, the Proposal indicates that when an order is repriced, it maintains its original price/time priority. While we understand the rationale for this, we believe it is inappropriate. The repricing mechanism is designed to fade an order’s price, and would only re-establish the original limit when another order has improved the quote, while maintaining time priority. This effectively creates a situation where a new order establishes a new price level, thus contributing to price discovery, but that new order is immediately punished by being ranked lower in time priority over a pre-existing order which chose not to trade at the same price earlier.

We do not believe this is a fair outcome for all participants, and believe that time priority should be reset at all times when the Smart Limit order type improves the tradable limit price of an order.

## Smart Peg & Discretionary Pricing

The “Smart Peg” order type proposed as part of the new Alpha DRK venue includes some features that we believe raise questions of appropriateness, and warrant further discussion. The order type will peg its orders to the near side NBBO but also allows for orders to execute more aggressively up to the mid-point of the NBBO as long as the limit price allows for this, albeit with a lower priority than other orders in the book.

Orders with discretion do have precedent, including on Alpha Exchange, which previously operated the “price improvement iceberg.” However, all such precedents provided improvement up to the ultimate limit of the resting order, rather than to the maximum limit of the contra order. On the other hand, the Smart Peg order type is “greedy” in that it will offer the minimum amount of price improvement required to achieve a trade. This is a departure from acceptable norms where limit prices contribute to price discovery by establishing the most aggressive price the investor is willing to pay, thus providing public signaling of the value of the securities being traded.

The dual dynamic of being able to peg to the near side while allowing the order type to at its discretion match at the mid-point will encourage participants to walk up (or down) the book to ultimately seek out limit order pricing. This is needlessly inefficient. Participants will also have to justify executions which are made at the discretionary “greedy” price from a best execution perspective, adding to the burden of accessing the Alpha DRK market. These elements, when combined, create for a more complex and potentially unfair marketplace.

Finally, it is difficult to assess the fairness of the Smart Peg proposed order type (and the Alpha DRK market) without visibility into the Alpha DRK pricing model, which has yet to be released.

## Conclusion

There are several elements of the Proposal as presented that introduce novel order types and innovation to the Canadian market structure landscape. While we are supportive of many of these ideas, we do have concerns with the following:

1. Model risk associated with TMX QDS, specifically how is the signal accuracy measured, how will updates and changes be governed, and what happens in the event the model breaks.
2. Blurring the lines between dealer and marketplace with discretionary re-pricing of orders by an order book to achieve best execution.
3. Proliferation of even more trading venues and fragmentation of liquidity.

Given the above, we believe that the Proposal should not be approved as presented at this time, and instead be subject to more comprehensive industry consultation. Once the specific issues related to the items above, it would be appropriate to republish an amended Proposal for further comment by industry.

We appreciate the opportunity to comment on this matter.

Respectfully,

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