

## Annex E

### Local Matters Cost Benefit Analysis

#### *Anticipated Costs and Benefits*

The following is a description of the costs and benefits that may arise in complying with the proposed amendments to National Instrument 21-101 *Marketplace Operation* (NI 21-101) and Companion Policy 21-101CP (21-101CP), National Instrument 23-101 (NI 23-101) *Trading Rule* and Companion Policy 23-101CP (23-101CP); Form 21-101F1 *Information Statement Exchange or Quotation and Trade Reporting System* (Form 21-101F1); Form 21-101F2 *Initial Operation Report Alternative Trading System* (Form 21-101F2); Form 21-101F3 *Quarterly Report of Marketplace Activities*, and Form 21-101F5 *Initial Operation Report for Information Processor* (Form 21-101F5), together, the Proposed Amendments. Omitted from the cost discussion are Proposed Amendments that would clarify existing requirements and those that extend the exemption from transparency requirements applicable to government debt securities as we anticipate these changes will not result in any costs. We welcome feedback on any of these and any other additional costs and benefits that may be associated with the Proposed Amendments.

#### **I. MARKETPLACE SYSTEMS AND BUSINESS CONTINUITY PLANNING**

##### **(i) Participation in industry-wide business continuity plans**

Proposed section 12.4.1 of NI 21-101 would require marketplaces, recognized clearing agencies, information processors and marketplace participants to participate in industry-wide business continuity tests (BCTs).

##### Costs

Since virtually all regulated entities currently participate in industry-wide business continuity plan (BCP) tests on a voluntary basis, the additional costs and burden on these entities should be minimal. The effort required to plan and design, schedule and conduct testing would be similar whether BCP testing was mandatory or voluntary.

It ought to be kept in mind that any increased burden imposed by the requirement to coordinate BCP testing would, to some degree, be defrayed by savings arising from fewer separate (and duplicative) tests being conducted.

There may be additional costs that some marketplace participants may incur. For dealers that have not voluntarily participated in industry BCP testing, additional costs will accrue to them. To the extent that a marketplace participant would need to invest in additional infrastructure to connect to marketplaces' backup systems in order to participate in industry-wide testing, its expenditures would be higher than for those that already have the infrastructure in place.

## Benefits

We are of the view that compulsory participation in BCTs by marketplaces, clearing agencies, information processors (IPs) and marketplace participants is essential for any realistic expectation of a swift and complete recovery from a major disaster within a reasonable length of time.

Given the current, fragmented nature of the Canadian equity marketplaces, recovery from a disaster is significantly more complex than it was a few years ago. The requirement to participate in industry-wide BCTs would help ensure that efforts to develop effective BCP and disaster recovery plans (DRPs) will not be undermined by a lack of participation.

Full participation by all parties that contribute to the daily operation of the Canadian equities market would be necessary for the successful implementation of business continuity and disaster recovery plans if they were put into effect. Robust industry-wide BCTs would provide confidence that critical internal and *external* continuity arrangements are operational and compatible. Successful industry-wide BCTs could provide a certain assurance that, in the event of activating BCPs and DRPs, such participation would likely result in the maintenance of fair and orderly markets, improved resilience and reduce recovery time after a disaster.

### **(ii) Resumption of critical technology systems after disaster**

Subsection 12.4(2) of NI 21-101 would require a marketplace with a total trading volume in any type of security equal to or greater than 10% of the total dollar value of the trading volume in that type of security on all marketplace's in Canada during at least two of the preceding three months of operations to ensure that each system operated by or on behalf of the marketplace that supports order entry, order routing, execution, trade reporting, trade comparison, data feeds, and trade clearing can resume operations within 2 hours following the declaration of a disaster by the marketplace. Subsection 12.4(3) would require a recognized exchange or quotation and trade reporting system (QTRS) that directly monitors the conduct of its members or users to ensure each system operated by or on behalf of the marketplace that supports market surveillance can resume operations within two hours following the declaration of a disaster by the exchange or QTRS. In addition, an RSP that has entered into a written agreement with a marketplace to conduct market surveillance for that marketplace must ensure that each system, operated by or on behalf of the RSP, that supports market surveillance can resume operations within two hours following the declaration of a disaster by the RSP. Finally, subsection 14.6(3) would require an IP to ensure its critical information technology systems can resume operations within 1 hour following a declaration of disaster by the IP.

## Costs

Currently, certain equity marketplaces have set the goal to be able to resume operations of its critical systems within 2 hours after declaring a disaster. We do not anticipate any additional costs for these marketplaces. However, for a marketplace that does not currently have the elements in place to strive for 2 hour resumption of operations, we anticipate that it would incur significant costs if a secondary processing site had to be procured and robust disaster recovery

plans had to be developed and instituted.

The current RSP has set the timeframe within which it would be able to resume the operations of its market surveillance systems to be much less than two hours and therefore we do not anticipate that this proposed requirement would impose additional costs on the RSP.

It is also our understanding that currently there is an IP that has set the goal to be able to resume operations of its critical systems within one hour following declaring a disaster and therefore we anticipate that this proposed requirement would not impose a significant cost.

### Benefits

Marketplaces, information processors and RSPs are important market infrastructure entities and imposing a maximum recovery time after the declaration of a disaster will create a minimum standard for these entities and help ensure fair and orderly markets after a disaster. We think that the costs related to this specific proposed change are proportionate to these benefits.

#### **(iii) Uniform test symbols in production environments**

Section 12.3.1 proposes that a marketplace use uniform test symbols (as set by a regulator or securities regulatory authority) for the purposes of testing to be performed by its marketplace participants in the marketplace's production environment.

### Costs

We believe that providing uniform test symbols should not be costly to marketplaces. With regards to IT infrastructure and systems, the set-up and maintenance of test symbols would correspond to that of currently used symbols. Symbols for newly listed companies are often created, and symbols are readily retired in the course of ordinary business. The cost for a marketplace to add symbols is marginal as the table of symbols is scalable and the expense associated with its development has already been incurred.

With respect to allowing testing to occur in the marketplace's production environment, we note that a marketplace may incur set-up costs from designing and implementing an oversight regime for testing in the production environment. Sufficient ongoing surveillance would likely be required on the part of a marketplace to ensure that the testing activities of its participants in the production environment do not interfere with the orderly operation of a marketplace. As well, we anticipate that a marketplace would have written policies and procedures in place to regulate testing in its production environment and outline the actions it may take in certain circumstances to limit a participant's access with respect to testing.

We anticipate that the ongoing annual costs of complying with the requirement to use uniform test symbols to enable testing to be performed in production would be similar to those with respect to providing a separate testing environment.

## Benefits

As equity trading often involves sophisticated trading techniques and systems that connect to multiple marketplaces, the distinct testing environments that each marketplace furnishes remain disconnected and cannot associate with each other. The proposed change would give marketplace participants the ability to put new or altered systems, hardware or algorithms through their paces across multiple marketplaces in order to detect and correct any defects or flaws that may arise. This would help reduce costly incidents that have the potential to disrupt the fair and orderly operation of markets and in turn compromise the integrity of the markets. Furthermore, this proposed change would eliminate the risk that marketplace testing environments may not be a reasonably good proxy of the marketplace's production environments and instead allow participants to obtain testing results that would better mirror the outcomes that would arise when conducting bona fide testing.

We believe that the benefits to market integrity as a result of the proposed changes are proportionate to the costs of implementing these changes.

### **(iv) Security breaches**

Proposed subsection 12.1(c) of NI 21-101 would require a marketplace to promptly notify the regulator, or in Québec, the securities regulatory authority, of any material security breach of a system that supports order entry, order routing, execution; trade reporting, trade comparison, data feeds, market surveillance and trade clearing (trading related systems). As well, a marketplace would be required to promptly notify the regulator, or in Québec, the securities regulatory authority, of a material security breach of a system that shares network resources with a trading related system under proposed section 12.1.1 of NI 21-101.

## Costs

The expectation that a marketplace notify a regulator or securities regulatory authority of a material security breach would not impose a material or unreasonable cost. Marketplaces should remain vigilant of potential security threats regardless of whether required to notify a regulatory authority. Requiring marketplaces to notify the Commission of security breaches would require the marketplace to monitor for security breaches and adopt notification mechanisms to ensure that the regulator or securities regulatory authority, as applicable, will be promptly notified in the event of a material security breach.

## Benefits

The added requirement to promptly notify the regulator or securities regulatory authority of any material security breach would strengthen our ability to assure the integrity of our capital markets. Due to the growing complexity and interconnectedness of the various equity marketplace systems, a security breach in one system that shares network resources could impact other systems vital to the operation of a marketplace. Such system intrusions and disruptions

could pose significant harm or loss to marketplace participants.

We believe that notification of a material security breach to a regulator or securities regulatory authority along with updates on the status of the security breach and the steps being taken to remedy the breach would contribute to the security and resilience of the markets. These proposed requirements would help us become better informed of the security threats experienced by marketplaces and their efforts to combat them and we are of the view this benefit is proportionate to the costs associated with this change.

**(v) Independent Systems Reviews – Expansion of Scope and Revised Submission Deadline**

Subsection 12.2(1) of NI 21-101 is proposed to be amended to include that the annual independent systems review (ISR) also encompass systems that share network resources with trading related systems, that if breached, would be reasonably likely to pose a security threat to one or more of these systems.

We also propose to amend paragraph 12.2(2)(b) of NI 21-101 to allow that the report resulting from the ISR must be furnished to the regulator or securities regulatory authority within the earlier of 30 days of providing the report to its board of directors or the audit committee or 60 days after the calendar year end.

Costs

With respect to the scope of the ISR, since a marketplace is already required to engage a qualified party to conduct an annual independent assessment of its systems and internal controls, the review of systems that share network resources with trading related systems should not pose a significant additional cost to a marketplace.

Regarding the proposed alternate deadline for providing the ISR report, we note that the submission of the ISR report to a regulator or securities regulatory authority was already required, and that the proposed modification would provide for a clear and reasonable deadline based on the calendar year end. We do not expect marketplaces to incur material costs on account of this amendment.

Benefits

It is proposed that an annual independent assessment by a qualified party of a marketplace's information technology security and internal controls will encompass systems that share network resources with one or more of its trading related systems (auxiliary systems). A breach of these auxiliary systems could pose an appreciable security threat. Thus, an impartial risk assessment of such systems would contribute to the development of sufficient internal controls to detect, respond to and, ideally, pre-empt security threats. Such a risk assessment should also assist marketplaces to not only identify weaknesses but also to determine where to best devote resources.

Given the growing concern with system security, the added measures clearly establish the importance we place on this matter. The benefits of complying with these measures would be proportionate to the costs.

**(vi) Launch of new marketplaces and material changes to marketplace technology requirements**

The proposed changes to subsection 12.3(3) of NI 21-101 would prohibit a marketplace from beginning operations or implementing a material change to its technology requirements until three months after notification of the completion of the review of the marketplace's initial filing or change in information by the regulator or securities regulatory authority and a reasonable period of time after the regulator or securities regulatory authority has completed its review.

As well, proposed subsection 12.3(5) would prohibit a marketplace from launching operations before its chief information officer has certified that all information technology systems used by the marketplace have been tested according to prudent business practices and are operating as designed. Further, proposed subsection 12.3 (6) would require a chief information officer of a marketplace to certify that a material change to the marketplace's technology requirements has been tested according to prudent business practices and is operating as designed before the marketplace may implement the change.

Costs

We anticipate that the primary cost to a marketplace in complying with these proposed changes is an opportunity cost in not being able to begin operations or implement a material change to its technology requirements as soon as it is able and the effort required in certifying the testing of a marketplace's information technology systems or a material change to a marketplace's technology requirements.

Benefits

Setting a minimum period of time before a marketplace may launch operations or implement a significant technology change would help ensure that prudent business practices are followed by the marketplace during these periods. In addition, the proposed change would give marketplace participants and service vendors a reasonable opportunity to prepare for the marketplace launch or changes. As well, the proposed certifications would help mitigate systems risks that arise when a new marketplace or a material systems change to technology requirements is introduced.

We believe that the fair and orderly operations of a marketplace would be enhanced and the risk of a marketplace disruption and its associated unintended consequences would be mitigated with these proposed changes. We think that the potential opportunity cost lost by a marketplace due to the Proposed Amendments is proportionate to the benefits of protecting the Canadian capital markets as a whole.

#### **(iv) Other systems related amendments**

The information to be reported in Exhibit G in Form 21-101F1 and 21-101F2 is proposed to be changed to ensure we receive relevant and consistent information from marketplaces regarding systems, contingency planning system capacity and IT risk management. We anticipate that a marketplace will only incur nominal costs in reporting the information that is proposed to be added to Exhibit G and that these costs are proportionate to the benefits of having relevant and consistent systems information from marketplaces.

## **II. USE OF MARKETPLACE PARTICIPANTS' TRADING INFORMATION FOR CAPITAL MARKETS RESEARCH**

Proposed subsection 5.10(1.1) sets out conditions under which a marketplace may release a marketplace participant's order or trade information to a person or company without obtaining written consent from the marketplace participant with respect to the release of the information.

### Costs

There is no requirement for a marketplace to provide the order and trade information of its marketplace participants to a researcher. However, if a marketplace chooses to provide this information, it would incur costs related to the drafting and execution of agreements with researchers, research assistants and any entities involved in the verification of the research required under the proposed provision. As well, in the event of a breach or possible breach of the confidentiality of the information provided or of the agreement with the researcher, a marketplace may incur costs in taking all appropriate steps to address the breach or possible breach.

### Benefits

We are of the view that capital markets research benefits our market as a whole. This proposed change would rectify an unintended result of the amendments to NI 21-101 that came into effect in 2012 that prohibits marketplaces from providing order and trade information to capital markets researchers and would allow this type of research to once again continue. We are of the view that the costs are proportionate to the benefits of this proposed change.

## **III. ACCESS ARRANGEMENTS WITH A SERVICE PROVIDER**

Proposed section 5.13 of NI 21-101 would require a marketplace to ensure that a third party service provider that provides a means of access to the marketplace complies with the access criteria the marketplace has established under paragraph 5.1(2)(a) of NI 21-101.

### Costs

In ensuring the third-party service provider is complying with the criteria the marketplace has developed, costs may be incurred on account of discussions, reviews and possible changes to the marketplace's agreements with its third-party service provider.

### Benefits

We are of the view that access to a marketplace should be provided fairly and in accordance with the marketplace access requirements set under section 5.1 of NI 21-101. Prohibiting unreasonable limitations or conditions to access is an important aspect to the integrity of our markets and we think that the costs related to ensuring that marketplace access is provided in a manner that complies with section 5.1 are proportionate to the benefits of maintaining the principle of fair access to marketplaces.

## **IV. INFORMATION IN FORMS 21-101, 21-101F2 and 21-101F3**

### **(i) Provision of proposed form changes to RSP**

Subsection 3.1(1.1) of NI 21-101 would require an exchange that has entered into an agreement with an RSP to not implement a significant change to a matter set out in Exhibit E – Operation of the Marketplace and Exhibit I – Securities of Form 21-101F1 unless the exchange has provided the filing to its RSP for at least 45 days before implementing the change. A similar requirement is imposed on alternative trading systems.

### Costs

A marketplace is currently required to provide proposed significant changes to Exhibits E and I of Form 21-101F1 or Exhibits E and I of Form 21-101F2, as applicable, to its regulator or securities regulatory authority at least 45 days before implement the changes. These significant changes are provided to a regulator or a securities regulatory authority mainly via e-mail. We envision that the RSP would be included on the e-mails that are sent to the regulator or securities regulatory authority and therefore do not anticipate that a marketplace would incur significant costs in complying with this proposed requirement.

### Benefits

These proposed changes would help ensure that the RSP of a marketplace is kept informed of changes to the operations of a marketplace so that it is able to effectively perform its regulatory functions. We think that the nominal cost in complying with this provision is outweighed by the benefits of more efficient and effective regulation that the RSP can provide when kept abreast of changes to the operations of the marketplaces that it regulates.

### **(ii) Annual certification and consolidation of Form 21-101F1 and Form 21-101F2 information**

Proposed subsection 3.2(4) of NI 21-101 would require the chief executive officer of a

marketplace, or an individual performing a similar function, to annually certify that the information in the marketplace's Form 21-101F1 or Form 21-101F2, as applicable, is true, correct, complete and that the information describes the operations of the marketplace as implemented. Additionally, subsection 3.2(5) would require marketplaces to provide an updated and consolidated form on an annual basis.

### Costs

We expect that marketplace staff and the chief executive officer will need to devote time to reviewing the information in its applicable form to determine if the current information remains true and correct and if any additional information should be included so that the contents of the form completely and accurately describe the operations of the marketplace as they have been implemented.

### Benefits

These proposed requirements will help ensure that the information provided to the securities regulatory authorities is complete and up-to-date. This will improve our ability to understand the risks faced by the market in general and, in particular, the marketplaces that we regulate. The knowledge gained will also improve our ability to regulate marketplaces more effectively.

#### **(iii) Changes to Form 21-101F3**

The Proposed Amendments would require a marketplace to include information regarding systems changes and systems outages in Form 21-101F3.

The Proposed Amendments would also require the marketplace to provide information on all fixed income securities traded on its platform rather than just the top ten securities. Moreover, we propose to revise the representation of the information provided in Charts 2, 3, 15 and 16 so that marketplaces provide the raw number for the volume, value and number of trades rather than report them as a percentage. As well, the actual number of orders executed and cancelled would be reported rather than a percentage of these orders.

Finally, we propose to remove the requirement that marketplaces provide a list of all marketplace participants that are using the marketplace's co-location services and the percentage of marketplace participants that use a marketplace's co-location services. We note that the aforementioned information would be provided in Form 21-101F1 or Form 21-101F2 under the Proposed Amendments.

### Costs

We do not expect marketplaces to incur significant costs as a result of these proposed changes. The requirement to provide the raw number for the volume, value and number of trades rather than the percentage will require fewer calculations on the part of the marketplaces. We also expect that the reporting of all fixed income securities that are traded on the marketplace will not be difficult for marketplaces to provide, especially when using the electronic version of Form 21-

101F3. In addition, a marketplace should only incur nominal costs for the reporting of systems changes or outages.

### Benefits

The changes to the Form 21-101F3 will streamline some of the information reported and facilitate the electronic filing of this form. The proposed changes for additional information regarding systems and technology changes will help us anticipate and address issues that we may identify for marketplaces and keep abreast of changes in our markets in general.

## **V. PROVISION OF DATA TO INFORMATION PROCESSOR**

The Proposed Amendments would require a marketplace to not make available the order and trade information that it is required to report under sections 7.1 and 7.2 of NI 21-101 to any person or company before it makes it available to the information processor or information vendor as applicable.

### Costs

We do not expect that there will be additional costs to this proposed change as it merely codifies the current guidance in subsection 9.1(2) of 21-101CP and we expect that marketplaces are currently following this guidance. This proposed change however, would make it a requirement rather than merely provide guidance as to what the CSA's expectations are in this area.

### Benefits

To support the integrity and fairness of our markets, we hold that a person or company should be not be provided an advantage by receiving order and trade information before an information processor or, if applicable, information vendor. We think that the nominal cost of complying with this proposed change is outweighed by the benefits of ensuring that order and trade information is provided on a fair basis to all entities.

## **VI. OBLIGATIONS OF A RECOGNIZED EXCHANGE TO A REGULATION SERVICES PROVIDER**

Proposed section 7.2.1 of NI 23-101 would make certain provisions that currently must be included in an agreement between a recognized exchange and an RSP into direct requirements that a recognized exchange would have to follow. As well, it is proposed that an exchange transmit to its RSP information required by the RSP to monitor the compliance of the recognized exchange with its rules, specifically those that are related to and are necessary for the RSP to monitor trading on the exchange and across marketplaces. The proposed guidance regarding proposed section 7.2.1 would clarify the obligations that a recognized exchange would have in relation to its RSP.

### Costs

We do not anticipate any significant costs as a result of these proposed changes as we are of the view that these proposed changes help clarify the current requirements between a recognized exchange and its RSP.

### Benefits

We expect that the added clarity of an exchange's obligations to its RSP will help ensure that an RSP is provided with the appropriate information required to effectively conduct its oversight and thereby improve market integrity. We think that the nominal costs of these proposed changes are outweighed by the benefits of improved market integrity.

## **VII. FORM OF INFORMATION PROVIDED TO REGULATORS**

The proposed change to section 11.2.1 of NI 21-101 would require a marketplace to transmit required information in the manner that is requested by a securities regulatory authority and, if applicable, its RSP.

### Costs

We do not anticipate that the requested manner for required information will impose a significant cost burden on a marketplace.

### Benefits

This proposed change will ensure that regulators will receive information in the format that will be most useful and therefore assist in more effective and efficient regulation of marketplaces. We think this benefit outweighs the nominal costs in complying with this proposed change.

## **VIII. CLEARING AND SETTLEMENT**

It is proposed in subsection 13.2(1) of NI 21-101 that a marketplace must report a trade in a security to a clearing agency designated by a marketplace participant. Proposed subsection 13.2(2) of NI 21-101 limits the scope of subsection 13.2(1) in that marketplace trades in standardized derivatives or exchange-traded securities that are options, would not be subject to the provision.

### Costs

We anticipate that there will be costs to establishing a connection with a clearing agency to report trades however we do not think that these costs will be significant.

### Benefits

In the context of the acquisition by Maple Group Acquisition Corporation of TMX Group Inc.

and The Canadian Depository for Securities Limited, a not-for-profit securities clearing and settlement utility was transformed into a vertically-integrated for-profit clearing agency. The proposed changes would help prevent potential impediments to competition in clearing and settlement to ensure that the markets are fair and efficient, which we think, are proportionate to the costs of establishing a connection with a clearing agency to report trades.

## **IX. REQUIREMENTS APPLICABLE TO INFORMATION PROCESSORS**

Where an information processor is operated as a division or unit of a person or company, proposed subsection 14.4(6.1) would require the person or company to file the income statement, the statement of cash flow and any other information necessary to demonstrate the financial condition for that particular division or unit within 90 days after the end of the financial year of the person or company. Proposed subsection 14.4(7.1) would require the person or company to also file the financial budget relating to the information processor within 30 days after the start of the financial year of the person or company.

### Costs

All recognized information processors currently maintain such information and we do not expect that this proposed requirement would give rise to additional costs.

### Benefits

These proposed requirements however, would allow regulators to better understand the financial health of the information processor as the current requirement would allow an information processor to file audited financial statement and the budget of its parent company, which may not include sufficient detail to enable regulators to assess the financial viability of the information processor itself.