

# TMX Incident Report

## Toronto Stock Exchange, TSX Venture Exchange, TSX Alpha Exchange - Incident Report

Incident Title: System Outage on TSX, TSXV, Alpha (the "Incident")

Incident Date: February 27, 2020

### 1. Details of the Incident

#### 1.1 Incident Description

TMX Group experienced a market interruption on Thursday, February 27th that affected trading on Toronto Stock Exchange (TSX), TSX Venture Exchange (TSXV), TSX Alpha Exchange (TSX Alpha). The outage, which began at approximately 1:30pm ET was attributed to a system capacity issue within a messaging technology component of TMX's trading engine. To address this issue and in preparation for Friday's trading session, TMX has undertaken necessary measures to mitigate the risk of recurrence, including significantly increasing the capacity of the messaging component of the trading system.

TMX confirms that this incident was not the result of a cybersecurity attack.

After the trading application failure and full market halt at 1:54 pm, TMX's attempts to restart the trading complex encountered further complications that could not be resolved in a timely manner.

#### 1.2 Market Integrity - Decision Process on Closing the Market

- At 1:50 p.m. we immediately began remediation measures. Due to the nature of the incident, the best option was to focus on ensuring an orderly market open for Friday, February 28th.
- Given the time of the incident, we could not engage disaster recovery systems in time to ensure an orderly market re-open and closing session. Generally speaking, this can take up to 2 hours, which given the failure happened just prior to 2 p.m., would have put us at material risk from successfully running a closing auction.
- Even in a successful transition to DR, it is essential that we have the time to reconcile and verify the integrity of our internal data. We chose not to impose any potential additional risk to our clients by invoking DR.

### **1.3 External Communication**

As per our Incident Management Policies and Procedures, we immediately invoked our internal process by:

1. Disseminating Initial report indicating an issue had been identified.
2. Opened our external Incident Information Update (IIU) Bridge and provided updates to the trading community every 30 to 60 seconds.
3. Provided updates throughout the day via email including but not limited to: Status of the Market, Open Orders, Official Last Sale prices.
4. Provided Post Mortem to the trading community with clear instructions to status open orders and to reconcile trades.

## **2. Services Impacted**

All Order Entry (OE) on TSX Alpha and TSX P2 (Symbol Root M-Z)

In order to contain the incident, all Order Entry channels, including TSX Venture and TSX (A-L) were blocked at the network level. This also included all market data feeds.

Clearing

Our clearing systems were not impacted. Our official book of record for any transaction executed on Thursday, February 27th was within CDS. The files sent to CDS on the evening of February 27th were reflective of what was in our database prior to the Incident.

## **3. Problem Resolution**

1. Incremental storage capacity was added.
2. Additional system monitoring and alerting have been implemented.
3. Enhanced system failover measures to ensure business continuity.
4. System readiness verification for start of business on Friday, February 28th.

If you need assistance with order or trade reconciliation, please contact TSX Market Operations at 416-947-4357.