

Information Circular IC13-036

Date: April 29, 2013

To: All CBOE Customers

From: Bill Brodsky

Ed Tilly

Ed Provost

RE: Follow-Up to Thursday's Trading Disruption

In our letter to you on Thursday, we reported that our systems and operations teams were in the midst of a thorough review to verify the root cause of Thursday's trading disruption at CBOE. The outage was the subject of extensive press speculation, much of it premature and uninformed. Although we urged the media to wait for a thorough systems review before speculating on the "cause" of the disruption, several, nonetheless, published erroneous stories based on un-named sources. We would like to take this opportunity to dispel some myths and to provide you with a factual update.

Our internal review of the software bug is now complete. We have determined that the catalyst was preliminary staging work related to the planned reconfiguration of our systems in preparation for extended trading hours on CBOE Futures Exchange (CFE) and eventually CBOE options. It was this staging work, and not a systems upgrade or new systems load, that exposed and triggered a design flaw in the existing messaging infrastructure configuration.

After the software bug was identified, corrective modifications were made on Thursday morning, and our systems processed trades without incident on Thursday afternoon and Friday. There were, however, two residual effects of Thursday morning's outage: 1) certain ancillary auction processes were unavailable on CBOE Thursday afternoon (these were reactivated for trading on Friday); and 2) at the close of trading Friday, some of Thursday's trade data was erroneously re-transmitted to OCC (the re-submitted data was identified and removed).

We conducted extensive testing and re-testing of our systems on Saturday and Sunday. Fully confident that Thursday's systems issue has been completely resolved, we have turned our attention to the next phase of our review, which includes a detailed "post mortem" on our operational response and procedures amidst the disruption.

Early Thursday morning our team identified and addressed a potential software issue and subsequently believed we were on track for a normal open. Unfortunately, the nature of a software bug is sometimes only identifiable once the system is operationally ready, such was the case last Thursday at CBOE. As we approached the open, it became apparent that the software issue was not fully resolved, and the decision was made to delay the opening.



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Our goal now is to ascertain everything there is to learn about this event so that we may serve you better going forward. Of primary focus is how we might minimize the time needed to resume trading in the event of any potential disruption.

While our Disaster Recovery (DR) back-up system was -- and is -- always an alternative, we believe we provided the most effective solution to the software problem given the information available when the bug surfaced. Much of the delay in the late opening, in fact, was in thoroughly preserving the integrity of the orders we had already received that morning. Going forward, we will continue to review other options and solutions to avoid future disruptions and to minimize down time in the event of an outage of any type.

We thank you for your patience and support last week, and we thank you for your continued confidence in CBOE. We pledge to do all that we can to better serve you going forward.