



# BETTER MARKETS

October 21, 2018

The Honorable Mike Crapo  
Chairman

The Honorable Sherrod Brown  
Ranking Member

U.S. Senate Committee on Banking, Housing, and Urban Affairs  
534 Dirksen Senate Office Building  
Washington, DC 20510

Re: **Oversight of the Status of the Consolidated Audit Trail**

Dear Chairman Crapo and Ranking Member Brown:

Thank you for holding this important hearing to examine the SEC's implementation of the Consolidated Audit Trail (CAT). Better Markets has advocated for an effective CAT for many years and appreciates this opportunity to share its views with the Committee.

As is well known, the CAT has the potential to be a game-changer for the SEC and revolutionize the Commission's capabilities to protect investors, facilitate capital formation and promote fair and orderly capital markets – on which job creators and savers, and indeed all Americans, depend. When completed, the CAT will serve two critical and long-overdue functions: enable the SEC to reduce, manage, and better understand market disruptions and crashes as well as identify, deter, and punish illegal manipulations and other predatory and trading abuses – all for the benefit investors and our markets.

Those functions are vital because investor confidence and trust are the foundations upon which our markets are build and grow. Yet, today, almost ten years after the “Flash Crash,” we remain at grave risk of another one, which will crush confidence of investors and damage our capital formation capability for years to come.

Our markets are moving at the 21<sup>st</sup> Century speed of milliseconds, but our regulators are too often hopelessly stuck with technology better suited to the horse and buggy era of the 19<sup>th</sup> Century. The CAT could change all that and catapult investor protection into the 21<sup>st</sup> Century. However, the CAT is currently bogged down in conflicts, regulatory weakness and legislative neglect and it is likely not to live up to its potential. Getting the CAT up and running as a powerful investor protection system will require this Committee's foresight, leadership, support and oversight.

## History

As this Committee is aware, the SEC first proposed to create the CAT immediately after the “Flash Crash” in May 2010. At a hearing on May 20, 2010, before this very Committee, then SEC Chairman Mary Shapiro discussed how a consolidated audit trail that would track orders could help regulators better understand flash crashes and other market abnormalities.<sup>1</sup> During the “Flash Crash” nearly one trillion dollars of stock market value was temporarily wiped out from investors’ accounts. This confidence-shattering event took just 18 minutes to unfold and saw some stocks inexplicably plummet to \$1 per share while others skyrocketed to more than \$100,000 per share.

Adding insult to injury, it took the SEC and the Commodity Futures Trading Commission (CFTC) more than four months and thousands of staff hours to reconstruct the events that spanned those 18 minutes, largely because regulators had neither the tools nor the data to understand how and why the stock market experienced its steepest intraday drop ever.<sup>2</sup> The Flash Crash vividly illustrated the need for a much more comprehensive, coherent, and accessible data trail.<sup>3</sup>

At the end of May 2010, the SEC released a proposal of SEC Rule 613 which would eventually create the CAT. The proposal envisions the CAT to enable the SEC to monitor and react to market events and manipulations in real time. Approximately two years passed before the SEC unanimously approved on July 18, 2012 SEC Rule 613, which creates a National Market System Plan (NMS Plan) called the CAT NMS.<sup>4</sup>

Rule 613 of Regulation NMS under the Securities Exchange Act of 1934 required national securities exchanges and national securities associations (also known as self-regulatory organizations (SROs)) to jointly submit a national market system (“NMS”) plan—

“to create, implement, and maintain a consolidated order tracking system, or consolidated audit trail, with respect to the trading of orders in NMS securities, that would capture customer and order event information for orders in NMS securities, across all markets, from the time of order inception through routing, cancellation, modification, or execution.”

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<sup>1</sup> See “Examining the Causes and Lessons of the May 6<sup>th</sup> Market Plunge,” U.S. Senate Banking Committee, May 20, 2010, S. Hrg. 111-774.

<sup>2</sup> Making matters worse, it is now apparent that even that four months of intensive work failed to uncover the reasons for the crash, as made painfully clear when a trader in London was arrested five years later, in April 2015, for his then-previously undisclosed and unknown role in causing the Flash Crash. See, “Trader Arrested in Manipulation That Contributed to 2010 ‘Flash Crash’,” Nathaniel Popper and Jenny Anderson, April 21, 2015, The New York Times, available at <https://www.nytimes.com/2015/04/22/business/dealbook/trader-in-britain-arrested-on-charges-of-manipulation-that-led-to-2010-flash-crash.html>

<sup>3</sup> Since 2010, we have witnessed other sudden and major trading upheavals that have indeed shaken the confidence of investors and markets. Markets were again thrown into uncertainty on August 24<sup>th</sup>, 2015 when 40% of NASDAQ-100 companies hit daily lows that were more than 10% below previous day closing price and over 19% of Exchange Traded Funds (ETFs) experienced price swings large enough to trigger limit up-limit down trading pauses.

<sup>4</sup> See “Rule 613 (Consolidated Audit Trail).” Available at <https://www.sec.gov/divisions/marketreg/rule613-info.htm>.

In adopting Rule 613, the Commission reflected on the difficulties of performing its oversight responsibilities in today's complex, dispersed, and highly automated national market system, especially when it needs to piece together "disparate data from a variety of existing information systems lacking in completeness, accuracy, accessibility, and or timeliness."

CAT NMS was mandated by the SEC to propose a Joint Industry Plan called the CAT Plan which would see the creation and implementation of the CAT system. An additional four years passed before the SEC released for public comment, in April 2016, a 1,090-page Joint Industry Plan developed by the CAT NMS consortium which proposed to create the CAT system.<sup>5</sup> Some of the members of this consortium have a long rap-sheet for having violated SEC's own rules and securities laws,<sup>6</sup> which are precisely the type of misconduct the CAT would enable the SEC to detect and punish more quickly, more often and more effectively.

The CAT system as envisioned by the Joint Industry Plan was flawed in several respects that were inherent in the very nature of the industry-led effort. The overriding and, indeed, likely fatal flaw was embedding industry influence if not control over a system that was for monitoring and policing the industry. Frankly, it was like asking bank-robbers to provide the police with the getaway routes for their future crimes.

As a result, Better Markets concluded that the Joint Industry Plan for CAT will not protect investors or rid our capital markets of disruptive and manipulative practices because it was designed by the very industry it is meant to oversee, and consequently it reflects the conflicted influence of the industry in nearly every respect.<sup>7</sup> For example, the SEC's oversight role in the Joint Industry Plan was weak, and enhancements to the system to ensure that it remains up-to-date and modernized were not built into the implementation plans, making improvements to the system haphazard and ad hoc. This means that regulators – and the American public – would have no real assurance that the system will keep pace with our rapidly evolving equity markets.

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<sup>5</sup> As of this writing, the Plan Participants are: BATS Exchange, Inc.; BATS-Y Exchange, Inc.; BOX Options Exchange LLC; C2 Options Exchange, Incorporated; Chicago Board Options Exchange, Incorporated; Chicago Stock Exchange, Inc.; EDGA Exchange, Inc.; EDGX Exchange, Inc.; Financial Industry Regulatory Authority, Inc.; International Securities Exchange, LLC; ISE Gemini, LLC; Miami International Securities Exchange LLC; NASDAQ OMX BX, Inc.; NASDAQ OMX PHLX LLC; The NASDAQ Stock Market LLC; National Stock Exchange, Inc.; New York Stock Exchange LLC; NYSE MKT LLC; and NYSE Arca, Inc.

<sup>6</sup> See "SEC Charges Direct Edge Exchanges [owned by BATS Exchange] With Failing to Properly Describe Order Types." Penalty: at least \$14 million. See, also, "SEC Charges NYSE, NYSE ARCA, and NYSE MKT for Repeated Failures to Operate in Accordance With Exchange Rules." Penalty: at least \$4.5 million. See, also, "SEC Charges NASDAQ for Failures During Facebook IPO." Penalty: at least \$10 million. See, also, "SEC Charges New York Stock Exchange for Improper Distribution of Market Data." Penalty: at least \$5 million.

<sup>7</sup> See Better Markets' comment letter in response to the CAT NMS Plan (Release No. 34-77734; File No. 4-698). (July 18, 2016). Available at <https://www.sec.gov/comments/4-698/4698-17.pdf>

## **The (Non)Implementation of CAT**

In January 2017, Thesys Technologies LLC was hired to build and operate the CAT (becoming the so-called “Plan Processor”). Problems with Thesys’s implementation of the CAT surfaced early in the process. For nearly a year, Thesys was not able to retain a Chief Information Security Officer, which meant Thesys could not receive the co-operation of the SROs in agreeing to the specification and other technical matters. There were other delays and challenges but because of the secrecy surrounding the entirety of the CAT implementation, the public, and this Committee, to this day, cannot clearly ascertain the definitive causes for those delays. The challenges and lack of progress became so problematic, that CAT NMS decided to fire Thesys as the Plan Processor, and hired a subsidiary of FINRA, FINRA CAT LLC, as the new Plan Processor.

As of this writing, CAT NMS has missed the following deadlines:

- The November 15, 2017 milestone completion date for the Plan Processor publishing final technical specifications for the submission of order data for Industry Members;
- The May 15, 2018 milestone completion date for the Plan Processor publishing technical specifications for Industry Member submission of customer data;
- The May 15, 2018 milestone completion date for the Plan Processor making the testing environment available on a voluntary basis and beginning connectivity testing and accepting order data from Industry Members for testing purposes;
- The August 15, 2018 milestone completion date for Industry Member order submission testing;
- The October 15, 2018 milestone completion date for Industry Member reporting of customer information to the Central Repository;
- The November 15, 2018 deadline for full Industry Member reporting.

When CAT NMS requested that the SEC extend the November 15, 2017 deadline for CAT system to come online and receive data from exchanges and FINRA, the SEC – correctly, in our view – declined to provide the CAT NMS such a “no action” letter which would have essentially excused their non-compliance with the SEC Rule 613. The public understood from this action that the SEC is signaling that the agency reserved the right to bring enforcement proceedings against the CAT NMS consortium for non-compliance.

However, after those initially promising steps to ensure that the SEC would hold the CAT NMS consortium accountable for their non-compliance with the SEC Rule 613 deadline, the SEC’s oversight of this important issue has lapsed.

## SEC Fails to Enforce the Law

Despite repeatedly violating SEC rules without any valid or compelling reasons (which should not matter anyway), the CAT NMS consortium has never been held accountable. As we had detailed in a letter to the SEC Chairman in September 2018,<sup>8</sup> the SEC had ample authority to compel compliance of Rule 613. In addition to the SEC’s general authority to enforce compliances of the securities laws and rules, the specific SEC rule that gave birth to CAT NMS (SEC Rule 613) itself includes a provision mandating compliance by the industry-members that comprise the CAT NMS and specifies that non-compliance could result in fines. Rule 613 states clearly:

- (h) Compliance by national securities exchanges and national securities associations.*
- (1) Each national securities exchange and national securities association shall comply with the provisions of the national market system plan approved by the Commission.*
  - (2) Any failure by a national securities exchange or national securities association to comply with the provisions of the national market system plan approved by the Commission shall be considered a violation of this section.*
  - (3) The national market system plan submitted pursuant to this section shall include a mechanism to ensure compliance by the sponsors of the plan with the requirements of any approved plan. Such enforcement mechanism may include penalties where appropriate.<sup>9</sup>*

Such a requirement was fundamental to the SEC’s decision to outsource this mission-critical system to the private sector in the first place. After all, it has been obvious since the decision was made to outsource the CAT to the private sector that there were going to be serious conflicts of interest and enormous incentives for at least some industry members to delay, weaken or kill the CAT before it ever came on line (as previously detailed by Better Markets<sup>10</sup>).

The Commission knew that as well when it was making the decision to outsource CAT to the industry and specifically armed itself with appropriate and effective regulatory tools to encourage and, if need be, compel the implementation of CAT according to the approved timelines and standards. In particular, the phrase “may include penalties where appropriate” was a considered decision by the Commission. This phrase was absent in the 2010 Proposed Rule 613 but was specifically included in the 2012 Final Rule 613. In the Adopting Release for the Final Rule 613, the Commission argued —rightly so—

“...that a penalty provision could provide an incentive for each SRO [self-regulatory organization, *i.e.*, stock exchanges that comprise the CAT NMS consortium] to comply with all the provisions of the NMS plan because each SRO will seek to avoid incurring any

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<sup>8</sup> See Better Markets Letter to Chairman Jay Clayton calling on the SEC to enforce its rules, (September 24, 2018), *available* at <https://bettermarkets.com/sites/default/files/BM%20Ltr%20to%20SEC%20Chair%20Clayton%20On%20CAT.pdf>.

<sup>9</sup> See 17 C.F.R. § 242.613(h).

<sup>10</sup> See fn. 7 *ibid.*

penalty under the Rule. The incentive to avoid a penalty could also reduce the risk of non-compliance with the Rule.”<sup>11</sup>

Thus, the SEC was forearmed, and the industry was specifically forewarned.

It was, however, all for naught. As was predictable and foreseen, the industry-dominated and conflicted consortium failed repeatedly to meet its legal obligations, indefensibly putting investors and markets at risk -- although simultaneously making sure that SEC cops on the beat remained unequipped to monitor and police their activities. Nevertheless, the SEC has repeatedly failed to use its authority, enforce the law or hold the lawbreakers accountable.

Given the critical nature of CAT, the specific statutory authorization, and the consortium’s inexcusable conduct, the SEC should have levied substantial daily fines for every day of non-compliance. After all, the industry was on notice and the SEC had already been more than accommodating, but its rule was and remained nonetheless unjustifiably violated. Moreover, every day of delay was another day investors were at risk. This is the precise circumstance anticipated by the SEC and provided for in its rule. The failure of the SEC to act has gutted the rule, nullified the purpose for the provision, removed the risk of a penalty and, therefore, any incentive for compliance.

## **Recommendations to Fix CAT**

CAT is owned, controlled, and operated by the for-profit industry, which is riddled with conflicts of interest, rather than the SEC which is statutorily required to prioritize the public interest. Under the SEC’s approved plan, CAT is funded by industry. Its data will be accessible to the “Plan Participants” that manage the private corporation that will have formal ownership of CAT. Some of these Plan Participants are affiliated with broker-dealers. The SEC will have access to this data for regulatory purposes only. As a philosophical matter, for-profit businesses should not be put in charge of and in control of CAT and its data, which will contain information that would have commercial value for any for-profit company seeking to maximize profits (as opposed to the SEC with its mission of upholding the public interest).

To avoid more years of disappointment, failure and non-compliance, the SEC must promptly reform the Plan’s organizational and governance structure. The SEC may choose to retain the building of the CAT system by an outside entity, as it currently does with its other IT systems, but it must host the system in-house, under its direct and sole control, retaining the prerogative to grant (or deny) access of the data to non-broker-dealer affiliated SROs. If the Commission believes it is necessary and appropriate, the Commission may enlist the already formed Development Advisory Group (DAG) to support and advise the Commission, as it selects the contractor or a consortium of contractors that will build the CAT according to the specifications in Rule 613.

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<sup>11</sup> See Adopting Release (Release No. 34-67457; File No. S7-11-10), p.235. Available at <https://www.sec.gov/rules/final/2012/34-67457.pdf>.

In the alternative, the industry's conflicts of interest must be eliminated or mitigated, or failure will be the inevitable outcome. To that end, the SEC must reconstitute the governance structure to reduce the industry's and SROs' dominance and increase the SEC's and public's representation in the governance of CAT NMS, LLC, specifically—

- The Commission must alter the charter and corporate identity of the CAT NMS, turning it into a not-for-profit organization, and align its mission to that of the SEC;
- The not-for-profit then must be led by a Board, the majority of which will be strictly independent directors with impeccable reputations and integrity;
- The chair of the Board must be a person without past, present or future conflicts who is appointed by the SEC in an open, public process;
- The Director of the Division of Trading and Markets must serve on the Board as the permanent sole vice-Chair;
- The newly formed not-for-profit organization can decide to maintain the Development Advisory Committee to advise and support CAT;
- The SEC should then solely control access and usage of the CAT system.

An additional overriding flaw in the CAT system is that the performance specifications of the current CAT Plan indefensibly fall well short of what is necessary and technologically possible. It is as if the SEC wants to get out of 19th Century, but only to the 20<sup>th</sup> Century and not to the markets and private sector of the 21<sup>st</sup> Century. Building such a disadvantage into the CAT Plan at the beginning means that the SEC simply will never catch up with the industry and likely never be in a position to fully and properly protect investors and markets.

For example, the CAT Plan currently requires that Participants report data to the Central Repository by 8 a.m. on *the next trading day*. For example, a trade (or any other reportable event) completed at 9:30 a.m. on a Friday on an exchange would not have to be reported into the CAT system until the following Monday at 8 a.m. – 70.5 hours after the trade has occurred. And delays for hours or close to a full day would presumably be commonplace.

In stark contrast, FINRA's TRACE and other systems already require much faster reporting, ranging from 10 seconds to 15 minutes on trade transactions. The CAT Plan offers no convincing justification – because, we submit, there is none – for the extraordinarily lax reporting time frame, particularly given that market participants have real time access to the information and electronic transmission of it would likely only take microseconds if not nanoseconds.

Real-time, or near real-time would allow for much more robust surveillance and quicker reaction time. As suggested by experts at Lawrence Berkeley National Laboratory, there are reliable measurement methods that can be devised with the help of a high-performance computer system that would provide regulators with early warnings of an impending Flash Crash-like

event.<sup>12</sup> These methods might provide as much as an hour of lead time, enabling regulators to intervene to pre-empt or mitigate such crashes (i.e., trading halts, circuit breakers, etc.). However, these would only be possible if the CAT receives real-time or near real-time reporting, and is able to consolidate such data for monitoring and surveillance.

Without using the readily available real-time reporting functionality used today by other regulators and the industry itself, the CAT will serve at best as a data archive, not a meaningful surveillance system that could help the SEC detect unstable trading patterns, avert flash crashes, and halt abusive trading practices while they are in progress.

Finally, the CAT will also not include futures data, which is a glaring omission. The SEC and other regulators concluded that the Flash Crash itself was caused by a futures contracts trade. In other words, even if we had a fully operational CAT at the time of the 2010 Flash Crash, CAT's database would not have included the necessary dataset to enable the SEC and the CFTC to conduct an audit to learn the identity of the trader or the type, timing, and size of the order – basically, what was then thought to be the causes of the crash.<sup>13</sup>

## SEC Has Opportunity to Fix CAT

On September 9, 2019, the SEC proposed amendments to Rule 613, ostensibly to increase transparency of and accountability at CAT NMS. The proposal would amend the CAT NMS Plan to require the consortium to:

develop a complete implementation plan containing a detailed timeline with objective milestones to achieve full CAT implementation (the “Implementation Plan”). This Implementation Plan would be filed with the Commission and made publicly available after approval by a Supermajority Vote of the Operating Committee. The Implementation Plan must be submitted by the Operating Committee to the Chief Executive Officer (“CEO”), President, or an equivalently situated senior officer of each Participant, prior to being voted on by the Operating Committee. Additionally, to further improve implementation transparency, the Commission proposes requiring the Participants to provide the Commission and the public with quarterly progress reports approved by at least a Supermajority Vote of the Operating Committee. The Quarterly Progress Reports must also be submitted by the Operating Committee to the CEO, President, or an equivalently situated senior officer of each Participant, prior to being voted on by the Operating Committee. The proposed amendments also include provisions regarding financial accountability to facilitate implementation of the CAT in an expeditious and efficient manner.<sup>14</sup>

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<sup>12</sup> See “Federal Market Information Technology in the Post Flash Crash Era: Roles for Supercomputing.” Bethel, E. Wes; David Leinweber; Oliver Rubel; and Keshenq Wu. Lawrence Berkeley National Laboratory. (2011).

<sup>13</sup> But see supra. n. [-].

<sup>14</sup> See Proposed Amendments to the National Market System Plan Governing the Consolidated Audit Trail. File No. S7-13-19, 84 Fed. Reg. 48458 (September 13, 2019) available at <https://www.federalregister.gov/documents/2019/09/13/2019-19852/proposed-amendments-to-the-national-market-system-plan-governing-the-consolidated-audit-trail>.

While some of these reforms are laudable (and long-overdue), they do nothing to address the foundational flaw that embeds the industry's conflicts of interest throughout the consortium and governance of the CAT. Moreover, they may actually incentivize inappropriate strategic behavior by some members of the consortium to cause future delays because the penalties would fall on others. This misalignment of incentives only exacerbates the already grossly indefensible lack of accountability.

This Committee should demand more from the SEC in holding CAT NMS accountable for its repeated failures, particularly in light of the SEC's record of failing to do so itself. This Committee should also press for other reforms outlined above that would fix some of the underlying structural defects of CAT NMS. At a bare minimum, the governance and control of CAT NMS must be fixed to remove the unresolved conflicts of interests that have caused the delays of the implementation thus far and will continue posing a serious risk and hamper SEC and FINRA's mission of investor protection and the promotion of market integrity.

## Conclusion

It is long past time that the SEC had readily at its disposal a state-of-the-art system for monitoring and tracking trading activities across all of the venues that comprise our national market system. As has been well known – and evidenced – for far too long, the SEC simply cannot fulfill its core missions of protecting investors, maintaining the integrity of our markets, and facilitating capital formation without such a system.

The Consolidated Audit Trail system should be a core regulatory tool, owned and controlled by the SEC and used to protect investors, make the capital markets fairer, and facilitate investments in companies. The CAT should not be a privately-held system in the hands of a deeply conflicted private corporation, which is supposed to not only build it but then use it to self-police. Moreover, the CAT's technological capabilities simply must be first rate, not a distant second to private industry standards, and capable of adapting to the ever-evolving markets.

The SEC has all the power, authority and incentives to fix these structural problems. It needs the will and the vigorous support of this Committee, which must hold them accountable and ensure that, after all these years, investors are protected from another Flash Crash and other confidence-killing and costly market practices.

Thank you for considering these issues.



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