

Customer Conference Call

CBOE-Bats Technology Integration September 26, 2017

- Chris Isaacson, EVP, Chief Information Officer
- Andy Lowenthal, SVP, Head of Global Derivatives

Agenda

➤ **Chris Isaacson, EVP, Chief Information Officer**

- EDGX Options Exchange complex order book launch
- New Index platform
- CFE migration update
- C2 migration update
- CBOE (C1) update

➤ **Andy Lowenthal, SVP, Head of Global Derivatives**

- Corporate integration update

➤ **Questions & Answers**

- Chris Isaacson
- Andy Lowenthal
- Eric Crampton, SVP, Global Head of Software Engineering
- Troy Yeazel, SVP, U.S. Electronic Trading Operations
- Anthony Montesano, Head of Trading Floor Operations & TPH Services

Cautionary Statements Regarding Forward-Looking Information

This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 that involve a number of risks and uncertainties. You can identify these statements by forward-looking words such as “may,” “might,” “should,” “expect,” “plan,” “anticipate,” “believe,” “estimate,” “predict,” “potential” or “continue,” and the negative of these terms and other comparable terminology. All statements that reflect our expectations, assumptions or projections about the future other than statements of historical fact are forward-looking statements. These forward-looking statements, which are subject to known and unknown risks, uncertainties and assumptions about us, may include projections of our future financial performance based on our growth strategies and anticipated trends in our business. These statements are only predictions based on our current expectations and projections about future events. There are important factors that could cause our actual results, level of activity, performance or achievements to differ materially from those expressed or implied by the forward-looking statements.

We operate in a very competitive and rapidly changing environment. New risks and uncertainties emerge from time to time, and it is not possible to predict all risks and uncertainties, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

Some factors that could cause actual results to differ include: the loss of our right to exclusively list and trade certain index options and futures products; economic, political and market conditions; compliance with legal and regulatory obligations; price competition and consolidation in our industry; decreases in trading volumes, market data fees or a shift in the mix of products traded on our exchanges; legislative or regulatory changes; increasing competition by foreign and domestic entities; our dependence on and exposure to risk from third parties; our index providers’ ability to maintain the quality and integrity of their indexes and to perform under our agreements; our ability to operate our business without violating the intellectual property rights of others and the costs associated with protecting our intellectual property rights; our ability to attract and retain skilled management and other personnel, including those experienced with post-acquisition integration; our ability to accommodate trading volume and transaction traffic, including significant increases, without failure or degradation of performance of our systems; our ability to protect our systems and communication networks from security risks, including cyber-attacks and unauthorized disclosure of confidential information; challenges to our use of open source software code; our ability to meet our compliance obligations, including managing potential conflicts between our regulatory responsibilities and our for-profit status; damage to our reputation; the ability of our compliance and risk management methods to effectively monitor and manage our risks; our ability to manage our growth and strategic acquisitions or alliances effectively; unanticipated difficulties or expenditures relating to the acquisition of Bats Global Markets, Inc., including, without limitation, difficulties that result in the failure to realize expected synergies, accretion, efficiencies and cost savings from the acquisition within the expected time period (if at all), whether in connection with integration, migrating trading platforms, broadening distribution of product offerings or otherwise; restrictions imposed by our debt obligations; our ability to maintain an investment grade credit rating; potential difficulties in our migration of trading platforms and our ability to retain employees as a result of the acquisition; and the accuracy of our estimates and expectations. More detailed information about factors that may affect our actual results to differ may be found in our filings with the SEC, including in our Annual Report on Form 10-K for the year ended December 31, 2016 and other filings made from time to time with the SEC.

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Welcome

Technology migrations are on track

- ▶ **Team is focused on executing a seamless technical and operational integration**
- ▶ **Committed to ensuring you continue to enjoy the same great trading experience and customer service you've always enjoyed working with CBOE and Bats**
- ▶ **Encourage open lines of communication and the feedback you've shared has proved valuable**
- ▶ **Technology migrations are on track as we approach some key dates and major rollouts**

Corporate Integration Update

Better serving your needs is central to our value proposition

➤ Ongoing technical reviews

- Technology, Operations and CFE teams meeting regularly with customers
- Conducting technical reviews, discussing readiness for migration to Bats technology
- Will continue to meet with you to ensure you're prepared for Day One

➤ Reorganization of Global Derivatives Group

- Division now comprised of five departments
- Better aligns talent and expertise of team with customer needs
- Positions us to deliver on strategic initiatives to grow all of our derivatives products

➤ New opportunities in product innovation

- Leveraging best of CBOE and Bats to bring more products to wider array of investors
- Planned launch of [bitcoin futures](#) in late 2017/early 2018**
- Planned launch of options on 10 [S&P Select Sector Indices](#) in 4Q 2017/early 2018**

EDGX Complex Order Book

Designed to be most efficient, flexible complex order book

- **Launch planned for Monday, October 23, 2017***
- **New EDGX Options COB functionality will include:**
 - New order handling
 - New risk management protections
 - New trade-through protections
- **Rollout scheduled to occur in two stages:**
 - Stage 1: CBOE to support options-only complex orders and single-sided COA
 - Stage 2: Crossing, stock/options and implied orders added – based on customer demand
- **What's next**
 - Certification testing has begun
 - Customers must certify to new COB functionality before production trading will be allowed
 - Saturday, October 21 is final weekend testing session
 - Monday, October 23* is go-live

New Index Platform

Will serve as foundation for our growing index business

- **CSMI Index data feed migrating to new, best-in-class platform in NY5**
 - Strictly a platform change, format of CSMI index data feed will remain the same
 - Will enable us to better calculate, disseminate data for new, existing indices going forward

- **Completion expected in first quarter of 2018, will occur in two phases:**
 - Phase 1: New IPs for both certification, production environments required for access
New data feed disseminated in parallel with existing data feed for a period
Two connectivity options: use existing CFE connectivity or order cross-connect
 - Phase 2: Multicast data channels for NY5 feed expanded from two to five

- **What's next**
 - **October 2:** Production network connectivity available
 - **October 30:** Certification test data available
 - **December 11:** NY5 production parallel period begins
 - **January 22:** NY5 production feed becomes primary
 - **February 2:** Final date of NY4 platform availability
 - **March 26:** CSMI data feed will split from two to five feeds

CFE Migration Update

Go-live date of February 25, 2018**

- Full functional testing of new trading platform within certification environment will be available **this Monday, October 2**
- All CFE TPHs, vendors and ISVs must certify to new platform
- Legacy CFE certification sessions being decommissioned and cannot be used to certify to new trading platform
- There will be no automatic transfer of certification sessions from legacy platform to new platform; new certification ports are required
- Once physical connectivity within NY5 or NY4 has been established, firms can request new certification sessions, may use legacy connectivity to certify
- TPHs required to certify for basic functionality, including establishing and maintaining connectivity, order entry and disconnect recovery
- TPHs expected to certify for all functionality intended to use in production

CFE Migration Update (cont.)

- **Upon successful certification, TPHs will be able to request and connect to production FIX or BOE sessions created in the NY5 data center with certified functionality enabled**

- **What's next**
 - **October 2:** For every TPH login that exists on current production trading platform for CFE, new logical order entry ports will be created on new production trading platform
 - **October 16:** New CFE production logical ports can be used for heart beating of new CFE production platform on Bats technology in NY5
 - **November 6:** Daily (Sunday through Friday) trading of test symbols in production available in new CFE NY5 production environment
 - **November 18:** First of five Saturday test opportunities
 - **December 6:** Basic connectivity testing for new CFE disaster recovery logical ports at 400 South LaSalle available
 - **February 24, 2018:** Final Saturday test
 - **February 25, 2018**:** Go-live

C2 Migration Update

Go-live date of May 14, 2018*

► Planned key highlights

- C2 will retain its existing single-leg priority, allocation method; will continue to be a straight Pro-Rata market without any DPM/PMM entitlements or Customer Priority overlays
- Expect most C2 order types and functionality to be supported by Bats technology; C2 platform change matrix and technical specifications published September 1
- C2 market-maker appointments will continue to apply on a product basis and quoting obligations following migration to Bats technology will remain unchanged
- C2 platform will remain in its current location at NY4 until expected migration to Bats technology in NY5
- C2 will maintain network PoP in NY4 indefinitely; current C2 TPH physical connections in NY4 can be used to access C2 once the platform has moved to NY5
- Existing TPHs will not need to complete new registration materials with migration
- Logical order entry via either BOE or FIX will replace existing concept of a login, each TPH may maintain as many sessions as they are willing to purchase
- Billing process will also change with migration

C2 Migration Update (cont.)

➤ What's next

- **September 1:** Technical specifications and platform change matrix were distributed to customers and posted to C2 integration website
- **November 1:** C2 certification logical ports can be used for heart beating and limited functional testing of new technology platform within certification environment in NY5
- **December 4:** Full functional testing -- including order entry, market data and drop -- of new C2 trading platform within certification environment will be available
- **1Q and 2Q 2018:** Technical dress rehearsals to ensure preparedness for switch-over
- **March 5, 2018:** Customers able to trade test symbols/series in new C2 production environment on daily basis
- **May 14, 2018*:** Go-live

C2 Migration Update (cont.)

- **Undergoing effort to unify our options functionality as much as possible across BZX, EDGX and C2 options exchanges**
- **To achieve this goal, we have announced two major releases on BZX and EDGX options this year to help prepare for C2 migration**
 - **October 6:** First release includes introduction of ContraBroker, ContraTrader information, Stop and Stop Limit orders, as well as changes to open/close tagging and Post Only behavior
 - **December 8:** Second release includes set of Risk Enhancements
- **Both releases subject to regulatory approval**

CBOE Update

- **Continue to assess migration of CBOE (C1) to Bats technology and expect to announce the switch-over date in the coming quarters**
- **In meantime, we plan to roll out two new technology enhancements in the CBOE trading environment**

Planned key highlights for PAR Workstation

- As part of migration of CBOE's Hybrid market model onto Bats technology, CBOE will re-vamp its floor systems, including the PAR workstation
- New PAR tool will initially interface with the legacy Command system and eventually connect to Bats technology once full migration is completed
- Bats technology being modified to incorporate concepts of a Hybrid market model, with floor brokers interfacing via PAR, and several new integrated and modernized features, which will be available to floor brokers
- We will continue to seek customer feedback on new PAR workstation as we continue its development

CBOE Update (cont.)

Planned key highlights for SPX

- Though the Hybrid market model will be built into Bats technology, the current market model for AM-settled SPX options, referred to as “Hybrid 3.0,” will not be replicated as part of that effort
- The Hybrid 3.0 model allows for quotes to be provided only by approved LMMs; those quotes reflect interest of trading crowd but are not directly accessible
- As part of roadmap leading towards full migration, CBOE will retire Hybrid 3.0 model and transition AM-settled SPX options onto the Command system’s Hybrid platform in 2018
- Each SPX market-maker will be able to stream its own electronically-accessible quotes
- SPX is the last trading symbol to transition onto Hybrid
- We will work with customers, TPHs and advisory groups to define details of the final Hybrid configuration for SPX, such as matching algorithm, quoting requirements and other functionality

Summary

➤ **EDGX Options Exchange Complex Order Book**

- Monday, October 23* launch planned
- www.bats.com/COB

➤ **New Index Platform**

- First quarter 2018 launch planned
- batsintegration.cboe.com/index-integration

➤ **CFE Migration**

- February 25, 2018** go-live planned
- batsintegration.cboe.com/cfe

➤ **C2 Migration**

- May 14, 2018* go-live planned
- batsintegration.cboe.com/C2

➤ **CBOE (C1)**

- Plan to announce switch-over date to Bats technology in the coming quarters
- Two technology enhancements to CBOE trading environment – conversion of SPX options to Hybrid platform in 2018 and development of new PAR workstations

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