

U.S. SECURITIES AND EXCHANGE COMMISSION

ROUNDTABLE ON PREPARATIONS FOR 24-HOUR TRADING

Thursday, September 17, 2026
10:00 a.m.

U.S. Securities and Exchange Commission
100 F Street, N.E., Washington, D.C.

Page 2 1 APPEARANCES: 2 3 Paul Atkins, SEC Commissioner, Chairman 4 Hester Peirce, SEC Commissioner 5 Caroline Crenshaw, SEC Commissioner 6 Mark Uyeda, SEC Commissioner 7 8 Moderators 9 Adrian Griffiths, MEMX 10 Katie Kolchin, CFA, Securities Industry and Financial 11 Markets Association 12 Jon Kroeper, SEC Division of Trading and Markets 13 Patrick Norton, SEC Division of Trading and Markets 14 Jamie Selway, SEC Division of Trading and Markets 15 Peggy Sullivan, SEC Division of Trading and Markets 16 Jim Toes, Securities Traders Association 17 18 Panelists 19 Matt Billings, Robinhood 20 Josh Burch, NYSE 21 Diwa Cody, Jane Street 22 Cromwell Coulson, OTC Markets Group 23 Hubert De Jesus, BlackRock 24 JD Del Raso, Virtu Financial 25	Page 4 1 CONTENTS 2 PAGE 3 Opening Remarks 5 4 5 Data Presentation: SEC's Division of Trading and 24 6 Markets, Office of Analytics and Research 7 8 Panel One: Preparedness for a 24-Hour Market 45 9 10 Panel Two: Resiliency in a 24-Hour Market 113 11 12 Panel Three: Expected Impacts and Consideration of 168 13 Next Steps 14 15 16 17 18 19 20 21 22 23 24 25
Page 3 1 APPEARANCES (Cont.): 2 3 Panelists (Cont.) 4 Nat Evarts, State Street 5 Heidi Fischer, Cboe 6 Dmitri Galinov, 24X 7 Will Geyer, Invesco 8 Michael Harrington, Citadel Securities 9 Naureen Hassan, DriveWealth 10 Ron Hooey, BNY Pershing 11 Brian Hyndman, Blue Ocean 12 Jiyoung Jung, Samsung 13 Todd Lard, Schwab 14 Todd Lopez, UBS 15 Chuck Mack, NASDAQ 16 Michael Masone, Citi 17 Robert McNamee, FINRA 18 Ryan O'Sullivan, BNP Paribas 19 Tim Quast, ModernIR 20 Steve Sosnick, Interactive Brokers 21 Brian Steele, DTCC 22 David Taylor, Exegy 23 Jason Wallach, Bruce Markets 24 Quito Zuba, MEMX 25	Page 5 1 PROCEEDINGS 2 DIRECTOR SELWAY: -- and opportunities and 3 challenges for future expansion. 4 To kick off this roundtable, I'd like to 5 welcome Commissioner Peirce and ask her to give the 6 opening remarks. 7 OPENING REMARKS 8 COMMISSIONER PEIRCE: Thanks. Thanks, 9 Jamie, and welcome, everyone. Glad to see you all 10 here, and I appreciate everyone who's come to 11 participate or who's watching in person or online. Of 12 course, I've got to give you my disclaimer, which is 13 that my views are my own views as a commissioner, not 14 necessarily those of the SEC or my fellow 15 commissioners. That is a disclaimer I could give in 16 my sleep, which brings me to the topic of today's 17 roundtable, which is overnight trading. 18 The roundtable answers a call that 19 Commissioner Crenshaw and I made nearly two years ago 20 when the Commission approved the registration 21 application of 24X National Exchange's registration 22 application, and it follows the informative roundtable 23 that SIFMA hosted earlier this year. 24 Extended hours trading currently is taking 25 shape as 23-hour, 5-day trading weeks. And while

Page 6 1 extended-hours trading has existed for several years 2 on certain ATSS, it still accounts for less than 1 3 percent of total trading for NMS stocks and is highly 4 concentrated in a handful of stocks. 5 Over the past two years, however, both new 6 entrants and legacy exchanges have pushed aggressively 7 to expand their operating hours in response to demand, 8 both abroad and domestic. The industry and our staff 9 have invested significant effort in updating the 10 market's infrastructure to make this shift possible. 11 In June, NSCC transitioned its clearing 12 operations to a 24/5 model that runs continuously from 13 Sunday at 8:00 p.m. until Friday at 8:00 p.m. That 14 same month, the Commission approved changes to extend 15 the SIPs' operating hours with the new schedule set to 16 launch on December 6. The Commission also approved 17 modifications to implement the market-wide limit up- 18 limit down plan during extended hours, and trading 19 venues have established standards to determine how to 20 treat certain corporate actions in this new 21 environment. 22 In short, the securities market is moving 23 decisively toward extended hours trading. Yet in my 24 conversations with market participants, many express 25 ambivalence about the shift to extended hours trading.	Page 8 1 learn from markets that already are creatures of the 2 night. The FX market, in particular, has operated 3 24/7 for decades. Crypto markets certainly don't 4 sleep. Certain index options trade overnight, and 5 futures markets generally follow a 23/5 schedule 6 similar to where our markets are headed. 7 Nor are our equity markets alone in 8 extending trading hours. Just last week, Korea's main 9 stock exchange, serving a country whose domestic 10 investors have long shown a notable interest in 11 accessing our markets, announced plans to extend 12 trading hours and to give foreign investors greater 13 access to their markets. In short, we have a lot of 14 examples to learn from. 15 I'm a big fan of roundtables. So thank you, 16 Jamie, for putting yet another one of these on, and I 17 appreciate all of the panelists for giving your time 18 and expertise. And really, especially, thank you to 19 the Commission staff and the Division of Trading and 20 Markets, which has worked so hard to put together this 21 and other roundtables, which I think are very 22 informative and really help us as we think through the 23 issues. 24 I do have some questions for the panelists 25 to consider. For those with experience in markets
Page 7 1 They often see it as an inevitable but not entirely 2 welcome development rather than as an exciting new 3 opportunity. 4 Some worry about thinner order books 5 overnight, wider spreads and the resulting increased 6 price volatility. Others are concerned about 7 compressing back-office operations such as overnight 8 batch processing cycles or critical IT maintenance 9 into a single hour each night. 10 Practical questions also arise. How can 11 firms ensure proper supervision and surveillance of 12 trading and risk during overnight hours? Should 13 issuers monitor trading in their shares overnight in 14 case of extreme market moves? These concerns are the 15 real consequences of extending trading into hours when 16 human involvement is limited. Automated systems carry 17 more of the load, and many long-standing market 18 systems and regimes must be reimagined. 19 Beyond these operational issues, there are 20 more fundamental human concerns, like sleep. Extended 21 trading hours will amplify worries about a data feed 22 going down at 3:00 a.m. or social media rumors tanking 23 your stock while your corporate office slumbers. 24 Our markets are not breaking new ground in 25 the move toward extended hours trading, and we can	Page 9 1 that have traded continuously or near-continuously for 2 years, what are the most important lessons for the 3 U.S. equities market as we move toward extended hours? 4 What have those markets taught us about 5 liquidity and market making during overnight sessions? 6 What have they taught us about manipulation and 7 cybersecurity risks, about staffing models for the 8 overnight shift? As we expand trading hours in the 9 equity market, what mistakes should we be careful not 10 to repeat? 11 Second, how should broker-dealers fulfill 12 their best execution obligations during the overnight 13 session when liquidity is dispersed and spreads are 14 wide? How should we think about investor protection 15 in such a market given that much of the demand for 16 overnight access comes from retail investors? Is 17 there assistance that we at the Commission or FINRA 18 should be giving? 19 As one commenter asked, for asset managers, 20 will choosing not to trade overnight remain an 21 acceptable fiduciary decision when liquidity and 22 execution costs are unfavorable? 23 Currently, issuers make filings and 24 publicize material information either prior to or soon 25 after core trading hours to mitigate the real-time

Page 10 1 effect that information will have on the stock price. 2 This information can include earnings releases as 3 well as other material business developments. 4 Will the change to extended hours trading 5 require issuers to change their behavior? Relatedly, 6 since filings submitted to EDGAR after 5:30 are 7 typically not processed until the next day, does the 8 Commission need to modify EDGAR to ensure that 9 corporate actions and material information are 10 disseminated timely in the overnight session? 11 And finally, should the Commission give 12 guidance or relief to ease the burdens that extended- 13 hours trading may impose on issuers, particularly 14 smaller ones? 15 As with all of our roundtables, I look 16 forward to lively and productive discussion. But if 17 the discussion does put you to sleep, you'll make it 18 easier for us to envision what the markets are going 19 to look like in the future. Thank you. 20 DIRECTOR SELWAY: Many thanks as always, 21 Commissioner Peirce. Commissioner Uyeda will be 22 providing remarks via recording. 23 COMMISSIONER UYEDA: Good morning, and 24 welcome to the SEC's roundtable on 24-hour trading. 25 Thanks to those of you who are here in person at SEC	Page 12 1 1960s when growth in trading volume created such 2 operational challenges for the human clerks who 3 process transactions that the New York Stock Exchange 4 temporarily shortened hours and even closed on 5 Wednesdays to manage the paperwork crisis. 6 The modern trading schedule of 9:30 a.m. to 7 4:00 p.m. that we are now familiar with wasn't adopted 8 until 1985. The evolution of trading has, of course, 9 continued as ECNs, ATSS, and modern broker-dealer 10 platforms have expanded investors' access to trading 11 during premarket, after-hours, and ultimately 12 overnight sessions. 13 As we look forward toward expanded overnight 14 trading, technology no longer appears to be the 15 limiting factor. There are, however, new questions 16 arising centered on the readiness of market 17 participants and regulators to operate and manage risk 18 in overnight sessions. 19 How will clearing, collateral, payment, 20 settlement, and default management systems be expected 21 to operate in the overnight session? Where should 22 market participants expect to bolster staffing levels 23 and monitoring capabilities? 24 Also, what failover, cybersecurity and 25 resiliency measures are appropriate for continuous
Page 11 1 Headquarters as well as to those who are watching over 2 our livestream. 3 And a special thank you to the participants 4 who have taken the time to prepare and present views 5 from a variety of different perspectives on what it 6 will take to prepare for trading in a round-the-clock 7 environment. 8 Securities trading hours in the United 9 States has never been static. They've evolved based 10 on demand and the technology available at the time. 11 In the earliest years of the New York Stock 12 Exchange in the late 18th century, information flowed 13 slowly and daylight framed human activity. Thus, 14 trading did not occur continuously. Instead, brokers 15 met for twice-daily call auctions, where each listed 16 stock was announced in turn, and trades occurred only 17 if bids and offers matched. 18 In 1871, the New York Stock Exchange 19 introduced continuous trading, a significant 20 modernization of market operations. But trading hours 21 and days would vary widely over the ensuing decades. 22 Only in 1952 was the five-day schedule 23 standardized and Saturday trading eliminated after 24 eight decades of six-day trading. But even then, the 25 standardized schedule was interrupted in the late	Page 13 1 trading? Will increased connectivity between global 2 markets introduce more volatility as market events 3 across the globe impact U.S. capital markets in real 4 time? 5 I'm also interested in how expanding 6 overnight trading may affect liquidity in different 7 securities. In some instances, expanded overnight 8 trading may redistribute liquidity away from periods 9 that are overly concentrated and chaotic. In others, 10 however, liquidity might spread too thin, reducing 11 price discovery and execution quality. More 12 information about these dynamics will be helpful to 13 tailor regulatory oversight of expanded trading. 14 As former chairman Richard Breeden observed 15 in 1991, the United States has long been part of, 16 quote, "A 24-hour securities marketplace because at 17 almost any hour of the day, anyone can buy or sell 18 securities of U.S. companies that are listed in Tokyo, 19 London, and other marketplaces." 20 The question is not whether trading happens 21 after traditional U.S. hours, but where it happens and 22 whether our markets are positioned to remain the 23 preferred venue for investors. 24 I commend the Division of Trading and 25 Markets and the staff who assembled a broad and

Page 14 1 experienced group of panelists, and I look forward to 2 hearing your views. 3 DIRECTOR SELWAY: Thank you, Commissioner 4 Uyeda. And now I'd like to invite Chairman Atkins to 5 deliver his remarks. 6 CHAIRMAN ATKINS: Well, thank you very much, 7 Jamie. And good morning, ladies and gentlemen. Thank 8 you very much for joining us today to discuss 9 preparations for expanding 24-hour trading in the U.S. 10 securities markets. Before sharing a few reflections, 11 as my colleagues have done, I have to note that the 12 views I express here today are my own as Chairman and 13 do not necessarily reflect those of SEC as an 14 institution or certainly not my fellow commissioners. 15 So we're moving, of course, towards a new 16 day and night for our capital markets. And it was 17 only 20 years ago when I was last here as a 18 commissioner that there was much angst and gnashing of 19 teeth about the prospect of extending U.S. trading 20 hours by minutes, not really even hours. 21 So today though, critical business and 22 economic events are not confined to traditional 23 trading hours. When the world reacts in real time to 24 breaking news, waiting to adjust the position or 25 rebalance a hedge until the clock strikes 9:30 on	Page 16 1 investments to our shores. 2 Furthermore, investors would be able to 3 react more quickly to events, thereby reducing risk 4 that accumulates overnight or over a weekend, while 5 increasing market efficiency. Indeed, markets benefit 6 when price discovery is not paused or distorted during 7 periods of volatility. 8 Of course, such a change to our markets must 9 be done thoughtfully and carefully, paying a special 10 attention to balancing investor protections with 11 market access. In particular, market infrastructure 12 must be capable of operating around the clock, so that 13 functions that investors and market participants 14 benefit from during the trading hours day are equally 15 available before dawn. 16 So several needed preparations are already 17 underway or in place. For example, DTCC has gone live 18 with 23/5 trade capture systems to enable clearance 19 and settlement capabilities. The industry has also 20 adopted a plan to establish overnight price bands and 21 require all trading centers that are active during 22 overnight hours to establish, maintain, and enforce 23 written policies and procedures that are reasonably 24 designed to prevent trades outside of those bands. 25 Furthermore, work is ongoing to prepare the
Page 15 1 Monday morning may beget missed opportunities or 2 additional risk, especially these days. 3 Instead, many investors are seeking the 4 ability to respond and to adjust their positions on an 5 ever more frequent basis. 6 U.S. capital markets are a fount of 7 relentless innovation and the trading hours realm 8 certainly is no exception. In fact, trading venues 9 are already responding to investor interest and demand 10 by looking to increase accessibility around the clock. 11 And as the staff will discuss shortly, some investors 12 are even out trading 24 hours a day on alternative 13 trading systems. 14 If registered U.S. exchanges can evolve to 15 satisfy this increasing appetite, and offer additional 16 hours, then greater investor benefit and protection, 17 broader global access and improved liquidity will 18 certainly follow. 19 Beyond fulfilling investors' needs, 20 extending exchange hours could produce many other 21 positive changes. For instance, it's evident that 22 expanded overnight trading would align U.S. exchange 23 hours with those of trading venues overseas, including 24 those for novel financial products. In turn, the U.S. 25 may attract more global capital, drawing increased	Page 17 1 securities information processor plans for overnight 2 price dissemination to promote transparency. 3 To that end, I'm very eager to hear how 4 today's roundtable participants are thinking about 5 overnight operations. 6 For example, market intermediaries that face 7 customers will need to make commercial decisions about 8 what services they provide overnight. Market 9 activity, meanwhile, may need to expand to raise the 10 incentives to offer various services such as prime 11 brokerage and securities lending that support market 12 making and institutional participation. 13 In the meantime, firms have cited 14 operational challenges in obtaining locates to support 15 market making at a time when spreads may be wide. 16 In this regard, I believe that tokenization 17 holds the potential to help the securities industry 18 achieve real-time inventory management, which could 19 drive efficiency, reduce settlement failures and 20 mitigate the risk of abusive naked short selling with 21 a goal of eliminating that possibility altogether. 22 Therefore, I've asked the staff to consider 23 what steps could be taken to dovetail a growth- 24 friendly environment with protections against harmful 25 market behavior.

Page 18 1 In light of these considerations, I look 2 forward to an informative conversation today on these 3 topics and others as some exchanges move towards a 24- 4 hour trading day. 5 The work happening across this room is 6 ultimately driven by industry, competitive forces and 7 investor interest. I'm truly excited by your efforts 8 to de-risk our markets and meet investor needs and 9 aspirations. And I'm optimistic about what these 10 measures could deliver. Markets, of course, must 11 serve the needs of issuers whose business is sustained 12 by the very capital that those markets provide. So I 13 would encourage them to engage in this conversation as 14 well. 15 Specifically, I welcome feedback on how 16 expansion to 24-hour trading may affect public 17 companies' execution of certain corporate actions, as 18 well as their obligations to disseminate material 19 information to the market and make SEC filings during 20 EDGAR filing hours. 21 Now, before I turn it back over to Jamie, I 22 should like to thank the Division of Trading and 23 Markets for organizing this roundtable and all of you 24 as today's participants for your thoughtful 25 contributions on this important topic. I encourage	Page 20 1 this roundtable possible through diligent work, 2 creativity and resourcefulness and attention to 3 detail. 4 We are confident that today's event will 5 provide a broad, deep treatment of a cornerstone 6 initiative to further modernize our equity markets. 7 Today's discussion will help better inform the 8 Commission and the investing public we serve. 9 Before I say more, please understand that I 10 speak today in my official capacity as the 11 Commission's Director of the Division of Trading and 12 Markets, and my remarks do not necessarily reflect the 13 views of the Commission, the commissioners or members 14 of the staff. This disclaimer applies as well to 15 comments made by my division colleagues during today's 16 program. 17 In June 1968, facing a paperwork crisis 18 brought on by an abundance of trading volume and an 19 absence of technology fit to meet the challenge at 20 hand, the NYSE began to close on Wednesdays. From the 21 days of the Buttonwood Agreement to the wake of the 22 Civil War, the exchange had operated as a call market, 23 as Commissioner Uyeda had noted. 24 In 1871, continuous trading began, including 25 a Saturday session. From May 1887 to September 1952,
Page 19 1 market participants and members of the public to 2 likewise share feedback and submit comments as we 3 consider next steps. 4 Instructions on how to do so can be found, 5 of course, on our SEC website. 6 So with that, let me hand it back over to 7 Jamie Selway, the Director of the Division of Trading 8 and Markets. Thank you all very much. 9 DIRECTOR SELWAY: Thank you very much, 10 Chairman Atkins and Commissioners Peirce and Uyeda, 11 for your remarks this morning and for your support of 12 industry and division efforts to prepare for a 24-hour 13 marketplace. 14 Once again, I thank Commissioner Peirce for 15 her idea of a roundtable on a timely, relevant topic. 16 I wish Commissioner Peirce nothing but the best as 17 she winds down an impressive and impactful tenure as a 18 regulator and begins an honorable new chapter as a 19 teacher. But I selfishly hope that she will still 20 find time to think of compelling roundtable ideas for 21 her old friends at the division. 22 I'd like to thank our moderators and expert 23 panelists for their meaningful contributions of time, 24 expertise and experience today. 25 I also thank my division teammates who made	Page 21 1 the market opened at 10:00 a.m. and closed at 3:00 2 p.m. with Saturday's trading ending at noon. The NYSE 3 ceased Saturday trading in September 1952. 4 Wednesday trading returned in January 1969, 5 but the NYSE moved its close back to 2:00 p.m. As 6 technological advancements increased capacity, the 7 exchange pushed the close later by 30, 4 times over 8 the next 5 years, ultimately landing at 4:00 p.m. in 9 October 1974. 10 In 1985, the exchange revised its open to 11 9:30 a.m. where it sits today. Roughly 20 years 12 later, fully electronic venues led an expansion of 13 market data infrastructure to extend coverage from 14 4:00 a.m. Eastern to 8:00 p.m. Eastern. Once again, 15 technological innovation and investment expanded 16 capacity and increased resiliency and multiplied 17 choices available to investors. 18 In recent years, in response to growing 19 interest from retail and non-U.S. investors, market 20 participants have revisited expanded hours once more 21 and perhaps for the final time. Four ATSs now offer 22 overnight trading in the U.S. In June, DTCC began to 23 clear equities on a 23/5 basis. FINRA's TRF has 24 broadened its hours. And on December 6, our market 25 data infrastructure is set to expand to 23/5, which

Page 22 1 will allow a number of approved exchanges to offer 2 trading during these hours. 3 The division supports these efforts and 4 commends the industry for progress made throughout 5 2026. The coming changes are substantial and will 6 have broad impact, and it is critical that investors 7 and issuers are up to speed. 8 Moreover, certain initiatives will continue 9 to evolve after December 6, and future expansion to 10 24/7 is a possibility. Today's roundtable is designed 11 to address these issues. 12 First, Dan Mathisson of the division's 13 Office of Analytics and Research will present 14 highlights for recently published paper to support 15 today's discussion. Available on the roundtable 16 website, the paper analyzes overnight and cross- 17 session trading volume, examines characteristics of 18 stocks traded during the overnight session and 19 explores market participant activity across trading 20 sessions. 21 After Dan's presentation, we will have three 22 panel discussions. Panel 1 moderated by Katie Kolchin 23 of SIFMA and division colleague Jon Kroeper will 24 review preparedness in a 24-hour market. 25 Panel 2 will focus on resiliency in a 24-	Page 24 1 I thank everyone for being part of today's 2 event and look forward to hearing your views. And 3 now, Dan, offer your presentation. 4 DATA PRESENTATION: SEC'S DIVISION OF 5 TRADING AND MARKETS, OFFICE OF ANALYTICS 6 AND RESEARCH 7 MR. MATHISSON: All right. Thank you, 8 Director Selway. Before I begin the presentation, I 9 want everyone to take a moment to appreciate the 10 spinning moon on my title slide. This was -- this 11 involved a collaboration with NASA. So, I don't want 12 anyone to complain that your Section 31 fees are 13 wasted. 14 All right. Now, this presentation has been 15 created in my official capacity as a policy advisor, 16 staff of the Division of Trading and Markets, but it 17 does not necessarily reflect the views of the 18 Commission, the commissioners, or other members of the 19 staff. 20 All right. Now one other piece of 21 housekeeping before I get going, which is I'm going to 22 be going through a lot of numbers today and going 23 through some data. Some of that will be CAT data. 24 That's the good stuff from the consolidated audit 25 trail that you can't get anywhere else.
Page 23 1 hour market with Jim Toes of STA and division 2 colleague Patrick Norton moderating. 3 Adrian Griffiths of MEMX and division 4 colleague Sullivan will moderate our third and final 5 panel, which will address expected impacts of these 6 changes, including potential next steps. 7 The meaning of resiliency is worth 8 reflection. Last Friday, our nation marked the 25th 9 anniversary of one of its darkest days. The markets 10 did not open on Tuesday, 09/11/2001, and remained 11 closed until Monday, September 17. Our fellow 12 citizens showed incredible resilience in the aftermath 13 of unspeakable evil, particularly courageous were the 14 many working in financial services industry who 15 suffered tragic loss. 16 But the technology capable of keeping our 17 markets open did not match the resiliency of our 18 people. Twenty-five years later, such technology is 19 readily available. After considerable, careful 20 planning, the marketplace is preparing to extend 21 operating hours to the fullest extent possible. 22 Successful execution of this project can underscore 23 our global preeminence, benefit investors throughout 24 the world and broaden capital formation possibilities 25 for U.S.-listed companies.	Page 25 1 Except you can get it one other place, which 2 is as Director Selway mentioned, we put out 3 everything -- any CAT data that's in my presentation 4 has been specifically approved by the Commission to be 5 seen publicly today, and was put out on our website 6 last week. So you could find that at this website 7 over there, but just Google SEC Overnight Roundtable 8 Memo if you want to find it. Please don't do that 9 right now though. I want you paying attention to me. 10 All right. But yes, everything is in there. 11 Now the primary author on this memo was Keegan Murphy 12 from the Office of Analytics and Research. We've been 13 getting great feedback on this so far. And so hats 14 off. Well done, Keegan. 15 All right. So I'm going to start with a 16 little bit of the history. I'm going to get behind 17 from -- out from behind the podium even though I was 18 told government people don't do that. But I'm going 19 to start with the history of it, although my history 20 pales in comparison to Director Selway's history and 21 Commissioner Uyeda's because I'm not going back to the 22 1700s. 23 DIRECTOR SELWAY: It's okay. 24 MR. MATHISSON: Well, I'm doing my best, but 25 I'm going to start with 1975. So in 1975, Instinet

Page 26 1 launched an aftermarket session. Now Instinet at the 2 time was a hardwired terminal system that institutions 3 had and then later they went out, they rolled out to 4 broker-dealers as well. And all the way back in 1975, 5 they said, why do we have to stop trading at 4:00 6 p.m.? If consenting adults want to trade on our 7 system at 5:00, why can't they? And so after-hours 8 trading, I would argue really started then in 1975 9 when Instinet rolled that functionality out. 10 Now fast forward in 1999, by the late 90s, 11 ECNs and some exchanges including the Chicago Stock 12 Exchange and an ECN called Archipelago operated by a 13 young gun named Jamie Selway at the time and others, 14 rolled out, started pushing their hours out, pushing 15 them starting earlier, closing later. 16 The SIP in response, the SIP is the tape, 17 securities information processor, that's the ticker 18 tape. The tape extended their hours in response and 19 by 1999, they extended their hours from 8:00 a.m. to 20 6:30 p.m. So at that point, we already had the tape 21 running all day, we had an hour and half-hour pre- 22 session, we had a two-and-a-half-hour post-session 23 with the tape running. 24 Fast forward to 2006, the ECNs and the 25 exchanges continued to compete with each other and	Page 28 1 hours from 9:30 to 4:00. We have a late session from 2 4:00 p.m. to 8:00 p.m. We have the overnight ATS 3 session that's been running for five years from 8:00 4 p.m. to 4:00 a.m. And then we have the early session 5 from 4:00 a.m. to 9:30. 6 They each have different market structure 7 aspects and they each have important differences. So 8 just to walk through this, let's start with regular 9 hours. Regular hours is 9:30 to 4:00. What does that 10 mean in a market, you know, that's open 24? 11 Well, 9:30 is still the open, this is what 12 you see on CNBC, 4:00 is still the close, the bell 13 rings at 9:30 everybody claps, the bell rings again at 14 4:00 p.m., everybody claps, it's very exciting. 15 And all market rules are operating at that 16 time. Rule 611, the trade-through rule for now is in 17 effect. There's a full set of investor protections, 18 meaning the limit up-limit down rules, the market-wide 19 circuit breakers, the short sell circuit breakers. 20 And Rule 605, which are execution quality 21 statistics, which until now have been exchanges in 22 ATS, but starting this month are now going to -- we're 23 now capturing that for broker-dealers as well and in a 24 few weeks those first reports will start coming out as 25 an aside.
Page 27 1 continued to extend their hours in both directions 2 both earlier and later. The SIP in response to that 3 rolled out extended their hours from 4:00 a.m. to 8:00 4 p.m. so now we were already 16 hours a day, five days 5 a week. And this is back in 2006, that's where we 6 still stand today. 7 Now in 2021, we hit the next milestone, 8 which is Blue Ocean, the ATS rolled out an overnight 9 session filling that eight-hour gap that was each day 10 from 8:00 p.m. to 4:00 a.m. Now, this -- I'll get 11 into this into the details of this, but the ATS was a 12 little different than the other sessions and that the 13 tape is not running. They print the trades 14 afterwards. 15 But since 2021, you could argue that we've 16 had a 24/5 market in that there is some venue either 17 an ATS or an exchange that you could trade on from 18 Sunday at 8:00 p.m. until Friday at 8:00 p.m. And 19 then finally, in 2026, here we are preparing to roll 20 out the tape 23/5 and exchanges as well. 21 All right, so where do we stand now? This 22 is a weird clock, it's a 24-hour clock. I didn't have 23 to work with NASA to get this one. But I'm going to 24 use this clock to demonstrate where trading is today. 25 There are four sessions today. We have the regular	Page 29 1 But those only apply during regular trading 2 hours, all that stuff works from 9:30 to 4:00, the 3 bell rings, we have the close, mutual funds settle on 4 that close and then we move into extended hours. We 5 have extended early and late extended sessions. The 6 tape is running. All right. 7 So the tape runs, trade happens, it's 8 immediately distributed, everyone sees it. Some 9 exchanges operate, exchanges can operate during those 10 times. But there's important differences. There's no 11 trade-through rule in effect in the pre and post. 12 There's no circuit breakers of any type. 13 There's no limit up-limit down. You don't 14 have to report execution quality. You know, it's -- 15 and this is very important to retail. The SIPs do not 16 count and all the financial vendor data vendors that 17 I'm aware of do not count the high or low or the 52- 18 week high or low if it happens in the extended hours 19 session. 20 Now that's an important difference, it's 21 sort of like preseason baseball, like if you hit a 22 home run, you hit the home run, but it's not counting, 23 it's preseason, it doesn't count towards your records 24 and it's the same with stocks. It only counts if it's 25 9:30 to 4:00, that's not going to change.

Page 30 1 Then you have the overnight session. This 2 is very different from the other sessions in that 3 there's no public tape. Right? So now, it's not 4 completely in the dark, they print all the trades on 5 the TRF, which is the trade reporting facility. That 6 now happens at 4:00 a.m. and must be hit the tape by 7 4:15. It used to be 8:00 a.m., but it was rolled back 8 earlier this year. And similar to the other sessions, 9 there's no currently no limit up and limit down. 10 There's no circuit breakers, et cetera. 11 Now, they also differ in where things trade. 12 So in regular hours, about half the flow trades on 13 exchange, about one-third of the flow is printed by 14 broker-dealers. So that is either internalized 15 program trading block activity, whatever printed by 16 BDs and 16 percent of the flow trades on ATSs. 17 In extended hours, almost none of the ATSs 18 operate. And so the ATS percent of the volume drops 19 to 1 percent, they barely trade in early and late. 20 There's more internalization and exchanges are about 21 40 percent of the volume. 22 And then in the overnight, exchanges are 0 23 percent of the volume because they're not allowed to 24 operate as of now because the tape is not running. So 25 it's an ATS-dominated market, they do three-quarters	Page 32 1 a.m. The tape will be running during this new session 2 and at least four exchanges are going to start 3 operating. In addition, I assume to the four ATSs 4 that are running today. So there will be a greater 5 choice of venues as well. 6 Now what's different about the night session 7 and the early session you might ask, isn't that just 8 the same as rolling starting the early session at 9:00 9 p.m.? It's sort of like that, but there is one key 10 market structure difference, which is 20 percent limit 11 up-limit down bands are going to apply to the night 12 session. Those do not apply to the early session. 13 So 4:00 a.m. will still be an important time 14 for a handful of stocks. If you have a stock, the 15 news came out, it's moved 20 percent, it's limit down 16 or limit up in the night session, it will start free 17 floating at 4:00 a.m., and then you'll start getting 18 trading in that stock at 4:00. Other than that, 19 there's really going to be no difference between night 20 and early. 21 Now that last little wedge of the pie, that 22 one hour, that's over there between 8:00 p.m. and 9:00 23 p.m. that I'm putting in quotes as the overnight, but 24 that is still going to be the overnight session. The 25 ATSs that operate today overnight are still going to
Page 31 1 of the volume, broker-dealers print one-quarter of the 2 volume. So important differences in both the rules 3 and also in terms of who can trade where. 4 Now really what's changing in December, it's 5 really about the tape. The tape is currently 16/5, it 6 runs from 4:00 a.m. to 8:00 p.m., it's going to go 7 23/5, it's going to be running from 9:00 p.m. to 8:00 8 p.m. the following day. We're going to go from 48 9 percent of the week being covered by an active tape to 10 68 percent. It's an incremental step forward. We're 11 not radically, we're not going from 9:30 to 4:00 to 12 24/7, we're going from 48 percent of the week to 68 13 percent of the week. 14 So where do we stand before and after? 15 Well, currently, the regular market is 9:30 to 4:00. 16 The regular market will still be 9:30 to 4:00. The 17 early and late go 4:00 a.m. to 9:30, and then 4:00 18 p.m. to 8:00 p.m., they'll still go for 4:00 a.m. to 19 9:30 and 8:00 p.m. and 4:00 p.m. to 8:00 p.m. 20 Nothing -- from 4:00 a.m. until 8:00 p.m. changes. 21 Nothing at all changes. 22 Now in the overnight market, here's where 23 the changes are. Today, the overnight ATS market is 24 8:00 p.m. to 4:00 a.m. There's going to a new night 25 session and this is going to run 9:00 p.m. to 4:00	Page 33 1 operate. All right? So for that one hour, you're 2 still going to have ATS trading with no tape, same way 3 we have that today for eight hours. So you'll have 4 five of these sessions. 5 Now what is not going to change? What will 6 not change is -- and this is really important, and 7 we've been getting a lot of questions about this, 9:30 8 a.m. is still the open. The bell is still going to 9 ring. It's still going to open at 9:30, that's still 10 going be the opening print. At 4:00 p.m., the bell is 11 going to ring again, that's still going to be the 12 close. That mutual funds will settle based on the 13 4:00 price. Like that is not going to change. It's 14 all going to be it's going to work the same way. 15 That's good. You're still 9:30 a.m. open 16 and a 4:00 p.m. close. If earnings -- you know, if a 17 company rolls and puts out earnings at 4:15, well, 18 that's not going to change. The extended hours, the 19 close is still the close, the extended hours is the 20 same as today. So presumably, there's no reason for 21 that stuff to change. 22 Also important, lot of people are saying, do 23 we have to staff overnight? Well, if you don't 24 trade -- the tape is running at 4:00 a.m. today. If 25 you don't trade today at 4:00 a.m. and you don't staff

Page 34 1 your desk today at 4:00 a.m., you don't need to staff 2 your desk at 4:00 a.m. next year. Now, will you want 3 to staff your desk? That's based on volume, if 4 there's a lot of volume, might choose to. You 5 certainly don't have to, but you might choose to. 6 So how much is trading overnight? And let's 7 start getting into the data here. So in the second 8 quarter, 12.5 percent traded in the early and late 9 session. Now that was up a lot. Like if you go back 10 to 2021, 5, 6 percent of the volume traded in the 11 earlier late session. It's been growing a lot. It's 12 up to 12.5 percent of the volume now in the early and 13 late sessions. So if you don't currently trade in 14 those, well, maybe you should, I don't know, it's up 15 to you. 16 Now the overnight hours, if you look at the 17 bottom here in orange are all the way down there, 18 they're at 1 percent of the volume as of the second 19 quarter. It was at like 0.1, 0.2 for years, you know, 20 sort of spinning in the mud a little and all of a 21 sudden the car has started accelerating. So now, you 22 know, we've had this significant growth. And so it's 23 only 1 percent of the volume, but it is growing like a 24 weed. 25 Overnight volume, another expensive graphic,	Page 36 1 Right? The overnight session is only ATSs, it was 2 only launched a couple of years ago. And you're 3 already getting 11 percent of broker-dealers to 4 participate. On the other hand, you're getting 89 5 percent don't participate and that includes a bunch of 6 very large brokers are in that 89 percent still. So 7 it's early days. 8 Now, what type of accounts are trading 9 overnight? This is cool stuff in CAT. CAT tags every 10 single trade based on the account owner, and it's 11 tagged into one of five categories. Like all trades 12 are either institutional, foreign, individual, market 13 maker or prop. Right? So in every trade that comes 14 into CAT is tagged with one of those values. And so 15 it allows us to sort of track what type of accounts 16 are behind different trading. 17 Now individuals -- I mean foreign is 18 dominating the overnight market and the gray column 19 there is overnight. Foreign is 37 percent of the 20 volume. Most -- you know, that's versus only 10 21 percent in the regular market that probably should 22 surprise no one. You know like U.S. investors are 23 asleep and a lot of this flow is coming in from Asia. 24 Most of the flow in the overnight market as of now is 25 Asian flow coming in and then a prop and market makers
Page 35 1 very expensive graphic, that one -- yeah, that was 2 Department of Agriculture. So, the overnight volume 3 is up 358 percent year over year. So BOATS, which is 4 Blue Ocean ATS, it's a clever acronym is -- has 65 5 market share in the overnight market. They were up 6 322 percent year over year. All right? So tremendous 7 growth, we're talking a small base, 1 percent of the 8 volume, tremendous growth. 9 Bruce ATS, which is Number 2, at 9 percent 10 market share in August, was up 103,000 percent. Now I 11 did the math on this, and if they continue growing at 12 that rate, in two years they will trade more shares 13 than exist in the known universe. 14 All right. So here's -- now let's get into 15 some CAT data. How many broker-dealers are 16 participating? There's 1,105 brokers that traded at 17 least one share in the second quarter. Right? So 18 this is about 3,000 broker-dealers out there, 1,105 of 19 them traded at least one share in the second quarter. 20 Of those 118 traded at least one share in between 21 8:00 p.m. and 4:00 a.m. in the overnight session. So 22 11 percent of broker-dealers traded in the overnight 23 session. Whether that's a lot or a little, I guess is 24 a glass half empty, half full thing. 25 You could say this relatively new product.	Page 37 1 providing liquidity against that flow. 2 Now, we're seeing individuals, U.S. 3 individuals, this number may surprise you are only 9 4 percent of the overnight market that's versus 19 5 percent in the regular session. All right, so U.S. 6 retail is not -- you know, they're trading it a 7 little, but they're not doing much yet. It's still a 8 relatively new thing. Like most U.S. retail are not 9 doing this, what this guy in the picture is doing and 10 trading in the middle of the night. They're sleeping 11 and which is probably a good thing. 12 Now, institutions are completely asleep. 13 They're not doing any in the overnight market, really 14 there's 7 percent of the volume in the overnight 15 market that's versus 30 percent of the volume in the 16 regular market. So institutions, you know, are -- so 17 far are heavily involved. And I think we'll see why 18 in a couple of slides. 19 Now institutions interestingly enough are 32 20 percent of the late extended session. So between 4:00 21 p.m. and 8:00 p.m., they're very active. It's not 22 that they're against trading outside of regular hours. 23 They tend to trade in the afternoon. They don't 24 trade in the morning or in the overnight session. 25 All right. So the paper gets into has a

Page 38 1 bunch of charts on concentration, like how many stocks 2 does it take to hit different percentiles and they're 3 beautiful charts and you should go look at the paper 4 after I'm done and not while I'm talking. 5 And but I'm to dumb it down a little bit and 6 just try to simplify that into one number basically, 7 which is how many stocks does it take to get to 50 8 percent of the volume? And in the overnight session, 9 it takes 15 stocks, like the top 15 stocks on average 10 make up half the volume for the day. So it's very 11 concentrated. 12 The early extends is even more concentrated, 13 it takes only seven stocks to get to half the volume. 14 That's in the regular market, we're at 256 stocks to 15 get to half the volume. Like if you lined up all the 16 stocks by volume, 256 would be the midpoint, the point 17 where you're at half the volume. 18 So the overnight session is very 19 concentrated. And what is it concentrated in? Well, 20 now we get to the ugly stuff. This is where it 21 doesn't look so good for the overnight market. 22 The Number 1 name that traded in the 23 overnight session in the second quarter was ADTX. The 24 second quarter VWAP for that stock, volume weighted 25 average price for the whole quarter was \$0.03. It's a	Page 40 1 obviously. But the gist of it I expect to be similar. 2 So it's a lot of very small names. 3 Now let's look -- that's sort of anecdotal 4 just looking at the top 10. So let's look at the 5 overall numbers. Fifty-two percent of the volume in 6 the second quarter in the overnight session was in 7 names below a dollar. So a little more than half is 8 in those names versus 11 percent in the regular 9 session. 10 Thirty-seven percent was domiciled in non- 11 U.S. that's versus 17 so it's -- you know, so now 12 that's in volume terms. And in terms of common stocks 13 versus ETFs, it's nothing to see here very similar to 14 the regular session. 15 Now that is -- so you see it's a lot of 16 these small stocks, you say, well, is any dollar value 17 trading there, is it just a lot of noise where it's a 18 lot of fake volume and tiny little names. 19 No. There's real volume there, because this 20 is so this is overnight as a percent of dollar value 21 traded not volume. And it's 0.8 percent. So you say 22 wait, with all those little names, how could it be 0.8 23 percent when it's 1 percent of the volume, like, you 24 know, but it's a bit of a barbell effect. They trade 25 a lot of little, tiny three-cents like Asian stocks.
Page 39 1 \$0.03 stock, that's not the commission, that's the 2 stock price. 3 The second one was GDC, that's a \$0.05 4 stock. The fourth one was a \$0.04 stock. Right? In 5 fact, 9 of the top 10 stocks in the overnight session 6 in the second quarter were sub-dollar stocks. These 7 are NMS stocks. You know, they haven't been delisted 8 yet or eventually have to either reverse split or get 9 delisted or climb out of the hole. 10 But these are NMS stocks and 9 out of 10 11 were these tiny stocks. They're also tend to mostly 12 be domiciled in Asia when you look at the top names. 13 So Number 2 is domiciled in Hong Kong, Number 4, 5 and 14 6 were domiciled in China. So 7 out of the top 10 15 names in the second quarter were domiciled in Asia. 16 So they tend to be -- you know, there's a lot of 17 small, a lot of Asian names. 18 Now in the regular session, you know, does 19 the regular session look like that? No. The blue is 20 the same chart for -- the same table for the regular 21 session. Only two of the names in the regular session 22 are sub-dollar, and only one of them is domiciled in 23 Asia, one other is domiciled in Finland, is Nokia and 24 this was for the second quarter. If we did it, when 25 the third quarter ends, it will be different names	Page 41 1 They also though trade a lot -- the other 2 stocks that they trade tend to be Tesla, Nvidia, 3 Apple, like Magnificent Seven-type, big expensive 4 names. And so when you weigh that in, they do have 5 dollar value that trades there, it just happens to be 6 in those names. And so they do trade real dollar 7 value at 0.8 percent, it's just got this weird barbell 8 thing going on under the hood. 9 When you look in dollar value terms, the 10 numbers look very different, 0.3 percent of the volume 11 0.3 percent of the dollar value traded is in stocks 12 below \$1. Right? So there 52 percent of the shares, 13 there's 0.3 percent of the dollars traded. 14 You know so -- and when you look at the real 15 capital flows, the dollar value and you look at the 16 risk, the economic risk that's moving around, it is in 17 mostly U.S. stocks actually. So 94 percent was of the 18 dollar value traded was domiciled U.S., 5 percent non- 19 U.S. 20 Now, the same names lead in dollar value. 21 The Number 1 in dollar value -- it's, like, totally 22 different. It's a completely different chart than if 23 you sorted on volume. Number 1 was Micron for the 24 overnight session. Number 1 stock for the regular 25 session in the second quarter -- also Micron.

Page 42 1 Number 2 was SanDisk. Number 6 in the 2 regular session -- SanDisk. Q is Number 3, four in 3 the regular session, et cetera. So 6 of the top 10 4 names in dollar value are the same names that trade in 5 the regular session. 6 So again, the story is it's got this barbell 7 thing going on -- tons of these little, tiny \$0.03 8 names in volume, and then also a lot of Nvidia, Tesla, 9 Qs, Intel, et cetera. 10 In terms of timing, we looked at -- we 11 chopped up the thing to say, hey, let's not just look 12 at overnight. Let's look at it in 10-minute buckets 13 and see when within, you know, the overnight session 14 the volume is trading. And it starts with a bang. 15 It's very heavily front-weighted. So the first 10 16 minutes is their biggest bucket in terms of volume. 17 And the -- and then it sort of starts trading lower. 18 But in the first hour, 21 percent of 19 overnight volume trades. Now, the reason that's sort 20 interesting is because 8:00 p.m. to 9:00 p.m. is their 21 biggest hour by far. And 8:00 p.m. to 9:00 p.m. is 22 also the one hour that the tape is not going to be 23 running and where the ATs will still be the only game 24 in town. So good news for the ATs is still they'll 25 keep their best hour, you know.	Page 44 1 those names are very tiny penny stocks. If you're 2 looking in dollar value terms, they're the same names 3 that trade during the day. 4 And while it's a small percent of the 5 volume, 1 percent of the volume, 0.8 percent of the 6 dollar value, the growth has been enormous, you know, 7 with it up more than 300 percent in the past year. 8 And so for more details, again, I'd 9 encourage you to just Google SEC Overnight Roundtable 10 Memo, and you can find it's filled with all sorts of 11 beautiful charts and graphs. It goes through all this 12 stuff plus a lot more, and also gives the details on 13 the methodology behind all these numbers. So I'd 14 encourage you to see that. 15 And now, Director Selway, I will yield my 16 remaining time. Thank you. 17 DIRECTOR SELWAY: Thank you, Dan, for the 18 excellent presentation, the spinning moon, the growing 19 weeds, and maybe most importantly, the practical 20 demonstration of the importance of the SEC disclaimer. 21 Paul Adcock in the room, he knows exactly who was 22 doing what at Archipelago back in those furious times, 23 so save me from embarrassment. 24 So with that, why don't I ask our first 25 group of panelists to come to the podium or the stage?
Page 43 1 And now on the -- at the end, the last, the 2 short, the smallest bucket is from 3:50 to 4:00 a.m., 3 where the volume really trails off. It just -- 4 there's no close to the overnight session where you 5 get this bang, you know. It sort of fizzles out. 6 I don't know why that happens. I would 7 assume people are starting to turn their systems off 8 and point them at the exchanges which are about to 9 open. Because the exchanges open at 4:00 a.m., so 10 probably people are starting to redirect their flows. 11 But for whatever reason, it ends with a whimper. 12 And I too will end with a whimper with a 13 boring summary slide, restating what I've already 14 said. 15 So overall, extended-hours trading has a 50- 16 plus-year history going back to 1975 or -- and then we 17 learned from Director Selway and Commissioner Uyeda it 18 has a -- you could argue it has a 250-year history. 19 The SIPs are going to expand their hours for 20 the first time since 2006. And, you know, and that 21 means -- and the overnight trading is currently 22 dominated by foreign investors, which you probably 23 would have expected. It's currently highly 24 concentrated in a small number of names. And again, 25 those names -- if you're looking in volume terms,	Page 45 1 We're pulling down Dan's moon, the overnight session 2 is. All right. So with that, I'll turn it over to 3 Katie Kolchin and Deputy Director Kroeper. 4 PANEL ONE: PREPAREDNESS FOR A 24-HOUR MARKET 5 DEPUTY DIRECTOR KROEPER: Thank you, 6 Director Selway. So welcome to the first panel. 7 We're going to talk about preparations to level 8 setting, complement to Dan's presentation, and talk a 9 little bit about the experiences of those currently 10 participating in the overnight market. 11 And then we're going to move into exchange 12 readiness and broker-dealer readiness, talk about 13 expectations for liquidity on Day 1, and then do a 14 rapid fire of final thoughts from our panelists if the 15 time permits. 16 So with that, Katie Kolchin is our lead 17 moderator here, and Katie will start off the 18 conversation once we go through the panelists. Can 19 you give your name, rank and serial number, or title 20 and affiliation, and then we can get started. 21 So let's start with you, Matt. 22 MR. BILLINGS: Got you. Thank you, Jon. 23 Thank you, Katie, for moderating this, and thank you 24 to the Commission for today's roundtable. It's a very 25 important subject matter, and excited to be here and

Page 46 1 privileged to participate. 2 I'm Matt Billings, Vice President of 3 Brokerage for Robinhood. I'm also President of 4 Robinhood Financial and Robinhood Securities. 5 Robinhood Financial and Robinhood Securities are two 6 broker-dealers. Robinhood Financial is the 7 introducing broker and Robinhood Securities is the 8 clearing broker, and that will come into play as we 9 talk through this. But thank you very much for the 10 opportunity. 11 MR. BURCH: Hi. Josh Burch, Head of Markets 12 at the NYSE. Likewise, thanks for having me today for 13 an important discussion on extended-hours trading. We 14 look forward to addressing and highlighting the 15 collaboration that we've experienced, you know, 16 amongst exchanges with the SIP Operating Committee, 17 advisors, and participants, for a fruitful discussion. 18 So thanks again. 19 MR. DE JESUS: Hi. Hubert De Jesus. I am 20 Head of Electronic Trading Research and Market 21 Structure for BlackRock. And so thanks for having me 22 here to talk about the experience, how 24-hour trading 23 will affect institutional investors. And I think it's 24 very important that we surface some of the issues 25 around stability, resiliency of the market, and make	Page 48 1 happy to be up here with my colleagues. 2 MR. MCNAMEE: Hi. My name is Rob McNamee. 3 I'm a Vice President and Associate General Counsel in 4 the Capital Markets Policy Group in the Office of 5 General Counsel at FINRA. And I'd also like to thank 6 Jon and Katie and the Commission for the opportunity 7 to participate. Thank you. 8 MR. WALLACH: Good morning. My name is 9 Jason Wallach. I'm the CEO at Bruce Markets. We 10 operate the Bruce ATS, and thank you for the 11 Commission for bringing us together today and inviting 12 me to participate. Thanks. 13 DEPUTY DIRECTOR KROEPER: Great. Katie, 14 take us away. 15 MS. KOLCHIN: Great. Thank you, Jon. So 16 the first segment of this panel, we're going to look 17 at what's happening today. And you've heard a lot 18 about it this morning. Similar to the clock, we're 19 going to have a couple of segments here. This segment 20 is what is happening from the 8:00 to the 4:00 a.m., 21 and then we're going to move on into the broader 22 industry move with new market participants coming on 23 board with the 23/5 model. 24 So Dan and his team did a great job, that 25 presentation, and also the report. Lots of numbers
Page 47 1 sure that infrastructure really supports investing in 2 overnight markets. 3 MR. DEL RASO: Hi. Thank you to the 4 Commission, Director Selway, for hosting such a 5 meaningful and impactful event for everyone. My name 6 is JD Del Raso. I've had the privilege of working at 7 Virtu Financial for the last 18 years. The first half 8 that tenure was making markets on exchanges, and then 9 the last half, I've been servicing our external 10 execution clients. 11 MS. FISCHER: Hello. I am Heidi Fischer, 12 Executive Vice President and Global Head of Cash and 13 Spot Markets at Cboe Global Markets. I echo all of 14 the other panelists' thanks to the Commission. We're 15 excited to be here with our fellow industry panelists, 16 and we're excited to be moving the market forward. 17 MR. HOOEY: Good morning, everyone. Thanks 18 to the Commission. Thanks, Katie and Jon. My name is 19 Ron Hooley. I'm Director, Global Markets Trading at 20 BNY. 21 MR. LOPEZ: Hi. I'm Todd Lopez. I'm the 22 Americas Head of Execution Services for UBS, an 23 international wealth manager and investment bank. 24 Thanks, Commissioner Peirce, for the idea for the 25 panel and Director Selway for the invitation. Really	Page 49 1 behind what's happening today. We're going to take 2 the numbers from the screen, and we're going to show 3 you some real-life experiences with three of the firms 4 that are currently trading overnight. 5 So Jason, we're going to kick off with you. 6 You are obviously an active ATS in the overnight 7 session for a few years now. Can you walk us through 8 sort of what's been your journey, your experience, and 9 how you've seen the ecosystem evolve? 10 MR. WALLACH: Thanks, Katie. So my journey 11 actually began prior to Bruce Markets in 2023 as a 12 market participant. I was running trading for Apex 13 Clearing and, in response to really what we're here to 14 talk about today, which is retail demand engagement in 15 our markets at historical high levels and also 16 historical highs for global interest at a retail level 17 and investing in our markets. 18 I was executing orders on behalf of some of 19 the largest retail brokers out of South Korea and 20 quickly realized that, you know, this market, which at 21 the time was served by a single venue, was lacking in 22 some of the pillars that define our U.S. market 23 structure. Those being institutional-grade 24 technology, resiliency, and competition. 25 And subsequently we founded Bruce Markets to

Page 50 1 deliver on exactly that resiliency and competition and 2 institutional-grade technology. We partnered with 3 Nasdaq to bring institutional-grade technology to the 4 market. From a competition standpoint, we've seen the 5 introduction of additional ATSS. As mentioned 6 previously, there are now four. We tend to 7 concentrate on three that are widely accessible. 8 And from a resiliency perspective, as you 9 introduce competition to the marketplace, you find 10 redundancy. And the result of this really is exactly 11 what we predicted. We saw the market grow. As we saw 12 in the presentation earlier, you know, in August 2025, 13 across the three ATSS of Bruce, Moon, and Blue Ocean, 14 the market was trading roughly 22.2 million shares a 15 day and about 1.2 billion in executed notional. 16 Today, as of August, that market is now 5 17 billion in executed notional and roughly 108 million 18 shares per session. So we're looking at a pretty 19 dramatic growth. And a large part of that being by 20 the fact that with competition and resiliency, we're 21 able to deliver confidence to brokers offering their 22 customers access to the overnight trading session 23 through resilient market with investor protections top 24 of mind, allowing them to scale and allowing all this 25 additional growth.	Page 52 1 trading. As Commissioner Peirce alluded to earlier 2 with the foreign exchange market, the firm's been able 3 to evolve with equity overnight trading as well. You 4 know, kind of having the ubiquity of our systems and 5 being able to trade different asset classes relatively 6 easily around the globe has certainly been helpful. 7 But something that we've kind of seen is, 8 you know, the operational risk that you have to kind 9 of assume when you first start trading on a new venue 10 has really kind of gotten to a place in the overnight 11 market where we're seeing a relatively healthy 12 ecosystem. 13 There's certainly competition amongst 14 dealers there, with healthy, liquid central limit 15 order books, which I think is always kind of the mark 16 of a healthy ecosystem and marketplace. You know, 17 applaud all the different innovation from really an 18 entrepreneurial spirit of the Bruces of the world that 19 have said, there's an addressable market here. Let's 20 come up with a solution. And certainly, market makers 21 and dealers will always show up to be there to provide 22 liquidity as long as there's a demand for it. 23 You know, I think it's going to continue to 24 certainly evolve, and we look forward to continuing to 25 hopefully tighten spreads and provide the liquidity
Page 51 1 With Bruce, we're now doing business with 2 roughly 25 U.S. broker-dealer subscribers. We have 3 approximately 50 market data clients around the globe, 4 and the market is responding accordingly. We've seen 5 DTCC move to a 24/5 opportunity for trade lock-in. 6 We've seen the TRF move up to 4:00 a.m. and eventually 7 to 9:00 p.m. on Sunday night. And so we're seeing a 8 lot of these market utilities and features begin to 9 mature to accommodate this marketplace. 10 As a result, Bruce is now, as of September, 11 seeing roughly 20 percent of the executed notional 12 across those three ATSS, as well as 15 percent of the 13 volume. 14 Our expectations are that this continues to 15 grow with investor confidence, with more brokers 16 continuing to participate, and we're seeing additional 17 adoption around the globe as more jurisdictions begin 18 trading overnight here in the U.S., but also change 19 the regulations to open the doors for these 20 opportunities in extended hours. 21 MS. KOLCHIN: Great. Thank you. And then 22 JD, let's move on to you, and if you could share your 23 journey as a market maker. 24 MR. DEL RASO: Thank you. Yeah. We've had 25 a longer runway, I would say, in terms of overnight	Page 53 1 necessary overnight. 2 MS. KOLCHIN: Great. Thank you. And then 3 last but certainly not least, Matt, we'd like to hear 4 a little bit about your firm's journey, but also that 5 of the retail investor, who we know is quite active in 6 the overnight session. And then I think you're also 7 going to share with us a little bit -- the risk 8 protections, investor protections has come up as 9 something that's been very important. I know that's 10 very important to Robinhood. 11 So maybe how you select all of the symbols 12 that Dan showed us are traded at night. 13 MR. BILLINGS: Got you. Thank you, Katie. 14 First of all, Dan, compliments, the presentation for 15 you and your team. That was -- I'm going to pick some 16 of that and use it in this because I thought it was 17 very topical for this. So thank you for that. 18 So Number 1, democratization of finance is 19 the focus for Robinhood. And one of the keys and the 20 pillars of that democratization effort is ownership. 21 It's ownership in the capital markets. It's ownership 22 in your financial future for retail. So how do you 23 get to the ownership? It's access. 24 It's all about access, and 24/5 is that 25 access. We're moving away -- I mean, you're giving

Page 54 1 the customer the ability to engage at the time that 2 makes sense for them, the flexibility to engage, and 3 removing those constraints of those traditional 4 trading hours. 5 Whether or not you're someone who is 6 opportunistic and is paying attention to the news and 7 is active in those sessions and looking for an 8 opportunity to, you know, engage in real time, or if 9 you're someone who's just managing a portfolio away 10 from the regular trading hours in the evenings and is 11 comfortable whether your limit order gets executed at 12 10:00 p.m. or 10:00 a.m. These markets are limit- 13 order-only marketplaces, and there's lots of structure 14 and lots of rigor behind them. 15 For us, it was -- we started in July 2023. 16 We started with less than 40 symbols, and we've scaled 17 thoughtfully every quarter since then. We're now up 18 to over 1,300 symbols for that. In aggregate, we've 19 traded over \$289,000,000 worth of notional volume, 20 and over 41,000,000 trades. 21 Our concentration, the concentration that we 22 have, our top 20 symbols account for 38 percent of the 23 shares traded in the overnight session, and 59 percent 24 of the dollar volume traded in that session. 25 The reason you see that spread between the	Page 56 1 large day was 11/5/2024, and that was election night. 2 Those are days that you anticipate would be 3 really busy, and you set up war rooms in anticipation 4 for that. Largely, there is a power to that Sunday 5 night session in which it gives you a head start on 6 what's going to occur for Monday's regular opening. 7 Certainly, we all have an eye on the news, 8 and we're all ready for that regardless, but if you 9 see something happening, there's escalation procedures 10 within Robinhood to stand up groups of folks, and to 11 have a better alerting system that commences, say, at 12 7:30. And to make sure that we have a seamless 13 opening at 8:00 p.m. for our clients. 14 And just another enhanced level of 15 preparedness for the regular market opening. 16 Certainly, as part of that discussion is going to be, 17 are we expanding capacity for the Monday morning 18 opening, things of that nature. 19 So there's lots of explicit positive things 20 about ownership and access and a lot of implicit 21 things that get you ready for the next trading 22 session. 23 MS. KOLCHIN: Really interesting way to put 24 it. Thank you for that, Matt. 25 Before we move on to the exchange readiness,
Page 55 1 38 percent in shares traded and 59 percent in the 2 volume traded, I thought Dan had a really good point, 3 is we do have eligibility requirements for that 1,340 4 symbols that we provide on a quarterly basis. We add 5 symbols. We remove symbols. But one of the factors 6 that we utilize is the price of the security, the 7 closing price of the securities. So if the security 8 is below \$5, we remove it for eligibility for trading 9 in that overnight session for that. 10 I also want to focus on the power of the -- 11 that one hour that you picked, Dan. I thought it was 12 very thoughtful, particularly on Sunday evenings. 13 When we think of our busiest sessions that we've had 14 from up until today, they were likely to happen on 15 that Sunday evening session with that. 16 Certainly, there's more room for 17 geopolitical -- something geopolitical calamity to 18 happen, some sort of macroeconomic issue, or some sort 19 of, you know, acute issue on a specific security that 20 has a ripple effect across that -- in the sector of 21 things. 22 And I would say our busiest day was 23 6/22/2026. There was a big tech sell-off. You're 24 going to see an outsized portion of top 10 days being 25 like that Sunday evening session. But also another	Page 57 1 I just wanted to hear -- I told Dan he had a lot of 2 great data, but JD and Jason put their heads together 3 and they were able to find some additional data that 4 we thought people would be very interested to hear. 5 So Jason, if you want to kick off a bit about spreads 6 and then JD? 7 MR. WALLACH: Thanks, Katie. So in line 8 with the conversation about competition and moving 9 from a single-market ecosystem to a multi-market 10 ecosystem, we saw one of the predicted effects, which 11 is a compression of spreads. And that occurred a few 12 months after the launch of Bruce ATS and Moon ATS, 13 following client onboarding and essentially putting in 14 that initial foundation to get to critical mass. 15 Interestingly, subsequent to that, we saw 16 that spread compression actually revert. And it asked 17 the question of why, and it's explained by the fact 18 that the market continued to grow and expand. And 19 that's not only from a participant standpoint, but 20 from the actual symbol universe that retail investors 21 and other participants were active in. 22 The market went from, you know, trading 23 1,000 or a few hundred unique names a night to trading 24 thousands. We now at Bruce ATS are touching orders in 25 over 12,000 unique symbols every single session and

Page 58 1 trading 5,000 unique symbols per month. 2 So the universe has expanded, ultimately 3 bringing in different participants, a diversified 4 number of tickers. And as a result, those spreads 5 have actually widened, backed out. But the market 6 does remain competitive. 7 And I'll leave it to JD to talk about how 8 that might compare to the daytime session. 9 MR. DEL RASO: Yeah. Thank you. It might 10 be interesting for people to hear that there is -- you 11 know, this overnight session does have a lot of 12 competition that's driving prices. Right? You think 13 of overnight and people are asleep or looking at a 14 market that's not necessarily what they're going to 15 see on the screen during the day. 16 But I think you could kind of make the 17 assumption that as we've added more and more ATSS, and 18 spread width has been relatively stable, that there's 19 still an appetite for dealers to make markets. And as 20 Jason was alluding to as well, the breadth of 21 securities continues to increase. 22 So I think, you know, the natural evolution 23 of this is going to be hopefully more participants 24 that want to engage with that liquidity overnight. 25 The breadth of securities that are getting quoted is	Page 60 1 So SIFMA stood up an extended trading hours 2 task force that includes not just our members but 3 across the industry. So we have exchanges involved in 4 that as well. 5 And everyone has been working over the last 6 couple of years. It started with let's harmonize that 7 trade date. So this is for the -- this will be 8 different than what you've been hearing about. It's 9 not the 8:00 because you're going to have a pause from 10 the 8:00 to 9:00, but the 9:00 to 4:00 a.m. for the 11 overnight with the emergence of the SIPs, TRFs, and 12 exchanges. And that one-hour pause is for systems 13 maintenance, and just to make sure we're maintaining 14 market resiliency as we're in our early phase of this. 15 We're going to go through a bunch of the 16 collaborations that have gone on across the industry, 17 but I wanted to make two points first. 18 One, you've heard me say phases. We are 19 definitely looking at this in Phase 1. As everyone's 20 heard, we're roughly 1 percent of total ADV today in 21 the overnight. 22 And then two, we're going to continue 23 monitoring and watching volumes grow. And that's the 24 second point. This -- the work's not done. We 25 haven't all just sat up here and said, great, we're
Page 59 1 certainly there, and all the market makers and 2 electronic liquidity providers certainly have the 3 systems to do so. 4 And I look forward to seeing if an already 5 healthy market in a lot of the securities that are 6 being quoted can even get tighter with more size over 7 time. 8 MS. KOLCHIN: All right. Thank you. Okay. 9 So we've seen how the ecosystem developed, and now 10 we're moving into the next phase. So December 6 is 11 about 80 days away. And we thought it would be very 12 interesting to hear from the venue perspective, but 13 then also the infrastructure, the data infrastructure, 14 and then move on to the broker perspectives and the 15 buy-side perspective on this. 16 Real quick before we set that up, I just 17 wanted to kind of tee up sort of the evolution of how 18 the industry got together. You're going to hear a lot 19 about collaboration today. 20 And a few years back when two exchanges were 21 approved to go ahead and trade in the overnight, the 22 industry kind of scratched their head and said, wow, 23 this is a new journey for us, yet you've got different 24 hours out there, you've got different pause times, 25 we'd rather see some harmonization.	Page 61 1 done, we're out. December 6 is happening. We're all, 2 as an industry, going to continue to monitor and 3 adjust accordingly as we see the development of the 4 ecosystem. 5 So I think, Josh, I'm going to start with 6 you because I think the SIPs is really a great example 7 of how the industry came together. 8 MR. BURCH: Sure. Thanks, Katie. And I'll 9 somewhat double-click on the points that you just made 10 because I think it's important to understand that as 11 the exchanges evolved, and began to throw their hat in 12 the ring for extended-hours trading, there's a natural 13 then knock-on effect. We've heard all morning that 14 the SIPs need to be able to be up during those times 15 to disseminate quote and trade information. 16 So I'll kind of interweave the chronology of 17 how exchanges entered the ring and how that led to the 18 SIP readiness and the SIP Operating Committee 19 collaborating to get us to where we are today. 20 And then I'll try my hardest not to bury the 21 lead and give an update as to what the actual status 22 and readiness is of the SIPs as we approach December 23 6. 24 So I think the journey began, you know, 25 about 2.5 years ago when 24X filed their Form 1. It

Page 62 1 was notably received for one aspect, which was it did 2 not contemplate SIP readiness to go live. And I won't 3 speak on behalf of the SEC, but I don't think that was 4 received very warmly. 5 So we as an industry kind of huddled a 6 little bit. NYSE Arca decided in the summer of 2024 7 to start putting the pieces together for what we 8 imagined an extended-hours exchange to look like. We 9 were the first operating exchange to do that. We were 10 also the first one to be approved in early 2025. 11 What that did is it kicked off the SIP 12 Operating Committee to take this up formally as an 13 initiative for the entire industry to get around. And 14 as Katie mentioned, it was paramount that we tried to 15 harmonize and keep things as uniform as possible to 16 streamline this process. 17 So as we headed into 2025, I think very 18 importantly MEMX put a CR out that really asked us all 19 and challenged us all to identify how we can uniform 20 symbol attribution, corporate actions, streamline 21 reporting. And they put together a list of items and 22 components that I think needed to be answered before 23 we move forward. 24 So a good part of the first half of 2025 was 25 the SIP Operating Committee, consisting of operating	Page 64 1 good piece of news as we all kind of barrel forward 2 with our operational governance and technology 3 enhancements that we want to put in place for 80 days 4 from now. 5 MS. KOLCHIN: That is definitely good news. 6 So before we move off of you, Josh, I just thought 7 another area that a lot of work has been corporate 8 actions. So I thought maybe you could speak to what's 9 happened there as well. 10 MR. BURCH: Sure. So first, a big tip of 11 the cap to SIFMA for flagging a number of items that I 12 think are imperative to us going live with a 13 harmonized, uniform set of corporate-action protocols 14 to get us through Phase 1. 15 We worked closely with the other primary- 16 listings exchanges, holding the pen at various 17 different times, to put together a mandatory 18 regulatory halt scheme that will go into place for 19 December 6 for Phase 1. So what does this mean? 20 And again, in the effort to harmonize so 21 that if I'm a participant, and I'm trading at 3:00 22 a.m., I don't want to have to think about what a 23 reverse stock split means on Nasdaq as opposed to 24 NYSE. Right? 25 I think we have that today during core
Page 63 1 SROs, advisors, FINRA, the SEC are in these meetings, 2 really rallying around what is important for the 3 industry to agree on, and how can we be instructive in 4 kind of setting that protocol. 5 That roadmap and blueprint for the SIP 6 Operating Committee really started to crystallize in 7 the middle of 2025. The legal committee is part of 8 the SIP Operating Committee, worked hard to start to 9 adapt plan amendments that was finalized in late 2025, 10 submitted to the SEC. 11 And then bringing you to current day or 12 current year, at least, in 2026, I would characterize 13 it as a lot of blocking and tackling. That's 14 development. That's final touches on proposals that 15 are either being iterated on or residing with the SEC 16 for approval. 17 And ultimately, those amendments, you know, 18 as we approach December, will go into action, and 19 we'll have a fulsome plan for both the exchanges and 20 the SIPs to be operational. 21 To bring you to current date, and to give 22 you the status, last week we had our SIP Operating 23 Committee -- or our quarterly SIP Operating Committee. 24 Both UTP and CTA are fully on schedule to be up and 25 running December 6. So as we sit here today, that's a	Page 65 1 trading, and that exists for very valid reasons. But 2 for the purposes of extended-hours trading, I really 3 think the North Star for us was harmonize it, make it 4 consumable, and have it be something that can go into 5 practice. 6 So there's a list of mandatory regulatory 7 halt corporate actions that will effectively say if 8 there's something like a CUSIP change or a symbol 9 change or a large dividend that's greater than 25 10 percent of the official closing price, that qualifies 11 as a regulatory mandatory halt. And that'll go into 12 effect. It will not -- that symbol will be halted 13 during the overnight session. 14 And what it does is it gives participants 15 time to consume, time to process, time to make 16 adjustments to their systems, to their trading, to 17 their reporting, so that during that compressed time 18 of 8:00 to 9:00, which, you know, we all recognize is 19 a bit of a system shock for a lot of us, that's one 20 less thing you have to worry about. So normalizing 21 that process was important to us. 22 From the exchange perspective, when we have 23 a halt for a corporate action, that will go on our 24 website right away. Participants can subscribe to 25 notifications that they'll get, and they can have that

Page 66 1 real-time as we update it. 2 From the SIP's perspective, during that 8:00 3 to 9:00 period, they will also be disseminating 4 information on these halts. So it'll come in kind of 5 two waves. At 8:15 and at 8:40, there's a CTA 6 reference file that goes out that provides you that 7 information. Again, at 8:55, there's a symbol 8 reference message that goes out. So you kind of get 9 three bites at the apple, albeit during that hour 10 period where that information will be disseminated 11 from the SIPs. 12 But I'll underscore it again, our intent was 13 to look at the unknown, err on the side of caution, 14 and put in front of participants a protocol that we 15 think is risk-savvy and consumable for implementation. 16 MS. KOLCHIN: That's great. Thank you. 17 Yes. Corporate actions was definitely the key issue I 18 think people identified we would have to work through 19 to go live. And I just want to add to that, this is 20 part of the ongoing work that everything is not done. 21 Hats off to the listing exchanges for getting that 22 piece of the puzzle done. 23 But the SIFMA Corporate Actions Working 24 Group -- I see my colleague Anthony is in the audience 25 here. He's running this for us. We're continuing to	Page 68 1 puzzle, given how much volume is happening, you know, 2 in the OTC off-exchange market. And we do think it's 3 important that market participants and investors have 4 that real-time data available to them when they're 5 trading in whatever session that might be. 6 So getting the TRFs ready for December for 7 the next step for overnight trading has been a very 8 important organization-wide focus for FINRA over the 9 past several years. 10 As an incremental step, I think Dan 11 mentioned in his presentation that in March, we took a 12 step of opening at 4:00 a.m. instead of 8:00 a.m., 13 which has allowed real-time transparency in the OTC 14 market for NMS stocks in that early morning session 15 that hadn't existed before. But of course, we're very 16 cognizant of where things are moving. That's why 17 we're here today. 18 So in July, we filed a proposed rule change 19 that was effective that will, in December, extend the 20 TRF operating hours to 23/5 in line with the SIPs. 21 What that means is 9:00 p.m. Sunday to 8:00 p.m. 22 Friday with this one-hour operational pause from 8:00 23 to 9:00 p.m. each weeknight. 24 So that means that during those extended 25 hours, you know, covering that new overnight period,
Page 67 1 work some of the things we're trying to do out of the 2 exchanges' control. We're trying to remove what we 3 frankly consider an archaic protect period and also 4 standardize the voluntary corporate actions for the 5 6:00 p.m. cutoff to standardize around that. 6 So more to come, but let's run through the 7 infrastructure. We've got DTCC live. We have the 8 SIPs green light on December 6. The other price 9 transparency piece of the puzzle, Rob, the TRFs. You 10 talk to us about the readiness there? 11 MR. MCNAMEE: Sure. Thanks, Katie. Yeah. 12 Happy to talk about this. I think this is also a 13 great example of collaboration amongst the SROs, 14 FINRA, the exchanges, and the industry as we've been 15 really moving toward the December 6 date. 16 For those who are not very familiar with 17 them, the trade reporting facilities, or the TRFs, 18 these are FINRA facilities that we operate with our 19 exchange business partners, the New York Stock 20 Exchange and Nasdaq, that facilitate the reporting of 21 off-exchange transactions in NMS stocks. 22 And importantly, those transactions that are 23 reported are then sent to the SIPs for real-time 24 dissemination. So as Katie said, this is a really 25 important piece of the sort of overall transparency	Page 69 1 as well as the existing hours, those trades that are 2 executed then will be reported and disseminated in 3 real time. And then trades that are executed outside 4 those new operating hours will be reported within 15 5 minutes after they open and disseminated. 6 So I think that's a really important step. 7 So it's intended to align with where the SIPs are 8 going, where the exchanges are going, and it also 9 includes definitional clarifications to update things 10 like trade date to make sure that the TRFs are aligned 11 with that 8:00 p.m. to 8:00 p.m. concept that the SIPs 12 have already adopted. 13 So like I said, December 6, we are ready to 14 implement then, but we've also been working a lot with 15 our members, with the industry, other SROs, to ensure 16 that everyone is ready for this new reporting regime. 17 So we published technical specifications. We've 18 published a series of technical notices to help assist 19 firms in sort of the operational technical pieces of 20 this, though I would emphasize that there are no new 21 fields or modifiers associated with the new reporting. 22 It's sort of just an expansion of the current hours 23 from a technical perspective. 24 The SIPs have a testing schedule that's been 25 announced, and the TRFs will also be hosting weekend

Page 70 1 testing sessions over the coming months in advance of 2 December. And we definitely encourage firms who are 3 active in this space to please come in, participate in 4 SIP testing and the TRF testing as they prepare. 5 We continue to engage with our members on 6 sort of the technical aspects, but also any 7 interpretive guidance that might be needed, and we do 8 plan to provide further guidance as we move toward 9 that. But I think the message here is FINRA is ready, 10 and we're working hard to make sure that the industry 11 is ready as well for December. 12 MS. KOLCHIN: Okay. We're seeing a lot of 13 green lights. I like that. So let's move on to 14 something that did not exist in pre and post, but when 15 people thought through the different risk profile of 16 the overnight, felt was very important to put in 17 place. 18 So Hubert, you are on the advisory committee 19 for the limit up-limit down. Can you talk to us? 20 Because this was another one that originally was a 21 great example of collaboration but recently had an 22 even greater example of how the industry is continuing 23 to monitor, identify another step or something else 24 that's needed, and work through it. 25 MR. DE JESUS: Yeah. So maybe before I talk	Page 72 1 Right? 2 One is that they recognize that the 3 overnight sessions are structurally different in terms 4 of liquidity as well as participation. And so they 5 designed protections that are relevant or meaningful 6 or appropriate for those sessions as opposed to just 7 copying the existing limit up-limit down protections. 8 Secondly, they -- we excluded things like 9 the pre-market session and the post-market session 10 because those are actually periods where you're going 11 to get things like earnings announcements or other 12 market-moving news, where there are going to be very 13 critical windows for real fundamental price discovery, 14 and there's going to be very legitimate price moves 15 that happen in that window that may be quite extreme. 16 And so we want to make sure that market participants 17 have the flexibility to move stock prices as 18 appropriate in regards to those news. 19 And then the third thing was they really 20 kind of listened to industry feedback on the timing. 21 The original proposal was for 7:45 p.m. to be one of 22 the reference prices, but Limit Up-Limit Down 23 Operating Committee actually issued an amendment 24 within the last couple of days to move that from 7:45 25 to 7:30.
Page 71 1 about that, it might make sense to talk about exactly 2 what protections have been established overnight 3 because we haven't gone into the details. 4 But essentially what happens or what will 5 happen starting December 6 is that there will be limit 6 up-limit down protections. They are not necessarily 7 going to look like the existing limit up-limit down 8 protections that we have today during regular market 9 hours. 10 Instead of halting the market, what's going 11 to happen is that stocks are going to be permitted to 12 move around within a 20 percent price band, and trade 13 simply won't happen outside of that 20 percent price 14 band. 15 And that price band is going to be set relative 16 to a reference price, which is going to be a 17 combination of the official closing price as well as 18 the consolidated last sale that happens -- and this is 19 where we're going to talk a little bit about the 20 collaboration -- but the consolidated last sale that 21 happens at 7:30 p.m. 22 Now, the reason why this is a great example 23 of collaboration is because the SROs, and I definitely 24 want to commend the SROs for this, have really 25 listened to industry feedback on a number of issues.	Page 73 1 And the reason for doing that was because we 2 wanted to make sure that ATSs in that one-hour window 3 from 8:00 to 9:00 p.m. could adopt the same 4 protections that the exchanges are going to have 5 during their session. And so we moved that window 6 back by 15 minutes so that the ATSs have time to 7 actually, you know, use the same reference price and 8 actually establish the operational kind of workflow so 9 that they could adopt the same sort of protections 10 during their one-hour window. 11 Now, that said, Katie, I think as you 12 mentioned, there's still more work to do. I do think 13 that as we go forward, it will be very important to 14 think about these price bands because 20 percent is a 15 very crude measure that could be quite large in quite 16 a number of securities. 17 And so as we acquire more empirical evidence 18 of how prices move overnight, it would be very 19 important to see how we can calibrate those price 20 bands so they could be more relevant to the underlying 21 individual volatility of different stocks and take 22 into account liquidity that you see in different 23 names. 24 MS. KOLCHIN: That's great. Thank you. And 25 before we move to Heidi, because she's got some

Page 74 1 thoughts on that, on the Phase 2 possibilities for 2 limit up-limit down, but I have to give a big shout- 3 out to Adrian. Thank you to all the exchanges for 4 their work on this, but Adrian has really been working 5 overtime to make sure that the limit up-limit down is 6 ready to go. So thank you. Heidi? 7 MS. FISCHER: Yes. So Hubert started 8 hitting on some of the points we wanted to make. You 9 know, LULD, it's an important tool to act as a 10 guardrail from disorderly price discovery, but we do 11 need to make sure that we don't hinder orderly price 12 discovery as a result. 13 So while the industry has come up with a 14 solution here that is great for a Step 1 and for a 15 Phase 1, we feel really strongly we need to continue 16 to refine this. We're concerned that the static price 17 bands we're using could actually lead to bad prices 18 rather than protect against them in some instances. 19 So, you know, Hubert talked a little bit 20 about earnings coming out in the morning. We also 21 believe that the overnight trading session will 22 largely be a tool to trade around significant news 23 events, significant company news that may come out 24 after hours. 25 And on the back of those circumstances,	Page 76 1 this overnight session. 2 So we think it'll be important to compare 3 those two, look at price discovery, look at impact 4 across those two different sessions, and use that 5 information to help us find the right balance to 6 protect investors going forward. 7 MS. KOLCHIN: That's great. Thank you, 8 Heidi, and exactly a good example of more work to come 9 and homework for Adrian. So I'm already letting 10 everyone talk a little long. I'm getting a little 11 over, so I want to make sure we get everything in. 12 So I know people had wanted to comment more 13 on this, but I'm to move over to Rob. One of the 14 other areas that's still an ongoing work stream, I 15 know there's -- we're just going to hit this at the 16 high level, but I think it's important for people to 17 know that you're on top of it, Rob. 18 MR. MCNAMEE: This idea of registration, 19 licensing. Yes. So yes, this one will be brief, I 20 think, but just wanted to touch on, sort of in the 21 spirit of all the collaboration that we've been 22 talking about. This is an area -- we're talking about 23 registration, licensing for individuals, as well as 24 branch office, and OSJ registration has been a topic 25 that we've been really engaged on with our members,
Page 75 1 you'll often have a stock where the value 2 fundamentally changes overnight and trading prices 3 should be able to reflect that. The current LULD 4 mechanism in the overnight session does not have an 5 adequate way to resolve when a name does hit limit up 6 or limit down. 7 Currently, the decision to halt these 8 securities will be based on the discretion of the 9 listing exchange. This leads to uncertainty about how 10 these names might be handled overnight if someone 11 should hit an upper or lower band. And it also could 12 potentially lead to someone trading at one of these 13 bands, which we don't believe would be the real value 14 of that security at that time. 15 So while we think about Phase 2 and moving 16 forward, there's been some conversation already about 17 moving bands. We think that will certainly be a first 18 step, but we need to make sure we're still protecting 19 investors as those bands are widening out. 20 So simply put, we agree with the decision to 21 move forward with the current plan but just want to 22 make sure we're continuing to refine and monitor. We 23 heard Dan say it. We heard Katie say it. We heard 24 Hubert say it. There are no LULD bands from 4:00 a.m. 25 onwards, which is the session immediately following	Page 77 1 and we'll continue to do so. 2 So just very briefly on the branch office, 3 OSJ, we, you know, as part of the FINRA Forward sort 4 of rule modernization initiative, we put out a couple 5 of notices last year requesting broad comment on how 6 we can modernize supervision, including branch office 7 and OSJ. We received around 100 comment letters on 8 those, and we've held roundtables with our members, 9 and we're continuing those conversations. 10 And that's a broad conversation, but the 11 extended-hours piece is one that we've definitely 12 heard as part of that, and we're continuing to move 13 forward with that and continue to engage. That's a 14 piece of a bigger puzzle there. 15 And similar on licensing and registration, 16 sort of the idea of who needs to be licensed and at 17 what capacity depending on what activities they're 18 engaged in. This is, again, a broader discussion 19 we've been having given sort of the move toward more 20 automated systems and trading and this longstanding 21 sort of thinking between sort of operational support 22 functions and sort of the securities and customer 23 order handling-type activity that does require, for 24 very good reasons, registration, licensing, and the 25 like.

Page 78 1 So again, the extended hours and overnight 2 session has been a part of that conversation, and 3 we're very, very cognizant of that. And we definitely 4 encourage, if firms have specific scenarios or 5 questions in that area, to please come to your RMA and 6 talk about it. We want to hear about that as we 7 continue to think about these issues. More to come. 8 MS. KOLCHIN: More to come. We're going to 9 hear that a lot today. More to come and more to 10 follow on. So let's move on to exchange readiness. 11 This is the final piece of the infrastructure puzzle. 12 Several of the exchanges have been approved. 13 We have two of them up here on the stage. So 14 perhaps, Heidi, you can start. We're just trying to 15 think about your strategic decision to participate in 16 the overnight. 17 MS. FISCHER: Yeah. Well, as you can 18 imagine, this wasn't a difficult decision for Cboe to 19 make. We've been on the forefront of innovation for a 20 long time, and client demand and improving markets 21 have always been our guiding principles there. We do 22 run four equity exchanges. We've decided to roll out 23 the overnight trading session on one of those 24 exchanges, Cboe EDGX. This gives us the ability to 25 give our customers flexibility that they're asking for	Page 80 1 Heidi mentioned, to us understanding what that means. 2 Right? What does that yield on NYSE Arca? What can 3 we learn from it, and how it will evolve going 4 forward? 5 MS. KOLCHIN: Okay. So that's Step 1. Step 6 2, I'm guessing, in the strategic planning was 7 thinking through the differences in functionality 8 you're going to offer in overnight versus the regular 9 trading session. 10 So perhaps you can explain to people what 11 you're thinking about there and lump that in with, in 12 light of what you might or might not have to change, 13 what's your readiness status for December 6? Maybe 14 we'll start with Josh this time and then go to him. 15 MR. BURCH: So yeah, I mean, we're ready. 16 We will have four test dates in October to facilitate 17 users and participants in our system in an overnight 18 environment. In November, we'll have two more testing 19 opportunities. We'll have a shadow environment live 20 for the entire month of November with test symbols and 21 live market data that they can, again, get in and 22 interact with. 23 I think, you know, between that and 24 obviously what the SIPs are doing and the other 25 exchanges, I see no reason why we can't have everybody
Page 79 1 overnight, but also gives us some time to assess how 2 this overnight session evolves and what it looks like. 3 So we'll be able to take what we learn and 4 apply that in a thoughtful and methodological -- can't 5 speak -- I'm going to skip that word because it's not 6 coming out today -- in a thoughtful way across our 7 remaining exchanges if and when we decide that it's 8 appropriate to roll it out further. And Josh? 9 MR. BURCH: Yeah. I mean, I think our 10 strategic decision was predicated on a few different 11 things. 12 One was just a level of inevitability. 13 Right? Where Dan mentioned this morning in his 14 presentation, we've been in an extended-hours trading 15 environment for five years now, and this is somewhat 16 of a natural extension where we've listened to 17 participants, we've spent a good amount of time in 18 APAC where a lot of this order flow originates from. 19 And the message has been pretty loud and 20 clear that there's a desire to have industrial-grade 21 technology with the brand of an SRO that can support 22 it and facilitate it and provide an alternative -- by 23 no means a replacement, but an alternative -- to 24 existing venues to trade. 25 And I think, you know, that will lead, as	Page 81 1 up and going. 2 MS. FISCHER: Yes. So I'll hit on the 3 differences question first. There will not be many 4 differences in our overnight session to our regular 5 trading hours. Maybe the biggest one is we will not 6 take any orders without a limit, so no market orders, 7 as well as any pegged order types will have to have a 8 limit attached to them. 9 And the only other new addition is we'll be 10 introducing a time in force that allows people to set 11 delayed start times on their sessions. So if 12 someone's sending orders in prior to the overnight 13 session, but for whatever reason they don't want to 14 start at 9:00 p.m., they want to start at 10:30 p.m. 15 or 2:00 a.m., or any time within that session, they'll 16 be able to set that delayed start time upfront. 17 As far as readiness, we do expect to be 18 ready on December 6. You know, we do already run 19 overnight trading venues for futures, for options, for 20 FX. So we're very well versed in what we need to do 21 from an operations, regulatory, and technology 22 standpoint to be there and to be ready. 23 The changes are already underway in our 24 testing environment, similar to what Josh was 25 referring to. We will start customer testing in our

Page 82 1 test environment on October 5th, with production 2 testing slated to follow on November 9th. 3 Beyond that, we are already in process 4 testing with DTCC. We are ready to test with the SIP 5 in October, pending their readiness. Our regulatory 6 team is ready to surveil on day-one launch, and we 7 already have our operations team in place and ready to 8 support this as well. 9 The last outstanding thing is we do have six 10 rule filings that still need to be completed prior to 11 launch. However, they have all been filed as 12 noncontroversial, and we are working closely with the 13 Commission to make sure that these are not an obstacle 14 in launching on time. 15 MS. KOLCHIN: That's great. More green 16 lights. So let's finish this section off with the 17 very important topic of risk management. So maybe 18 Jason, if you just want to tell us what's done today, 19 how you approach this? 20 MR. WALLACH: Yes. So we take a very 21 deliberately conservative approach with risk 22 management at Bruce Markets. We look at it as not 23 just a check-the-box, one-time event, but an ongoing 24 process of evaluation. 25 We run a series of 15c3-5 checks for all	Page 84 1 thinking about what they're recommending to people and 2 also your staffing thoughts. 3 MR. BURCH: So we're viewing risk and 4 surveillance somewhat together, but in two parts, one 5 of which is the operational and governance piece of 6 it, which stems from our trade operations group in 7 coordination with NYSE Regulation. That team has been 8 resourced on our desk, starting at 2:30 a.m., going to 9 8:00 p.m. for over 20 years already. So this will be 10 a natural extension for them. 11 Yes. We will be increasing our staff, 12 initially domiciled in the U.S., to cover that 13 overnight period starting at 8:00 p.m., leading into 14 the early session at 4:00. So we will have increased 15 staff at that time, but it will be resourced around 16 the clock, and people will be responding to calls, 17 emails, as they would today if participants have a 18 question. 19 And really, for the user's part, not much is 20 different, you know, to your earlier question. You'll 21 connect the same way. You'll send orders the same 22 way. You'll consume market data the exact same way 23 you do today. The one -- the only one difference will 24 be a trading session ID field that you populate 25 differently to indicate you want to trade, you know,
Page 83 1 orders as they enter the ATS, single-order limits, 2 execution limits, open-order activity, message 3 throttling, all to ensure market integrity as well as 4 protect our subscribers and their customers. 5 In addition to that, we deployed a trade 6 surveillance system in partnership with Nasdaq where 7 we run multiple patterns to identify any exceptions 8 that will be subject to review and proper escalation. 9 But again, I want to stress this is a very 10 conservative process where each subscriber is 11 evaluated based upon their firm profile, their order 12 flow profile. Firms are brought to market with fairly 13 conservative limits. We track historical activity and 14 adjust those as appropriate, both up and down, to 15 accommodate, you know, the growing business, but also 16 ensure that, again, both the market itself and our 17 participants are protected. 18 MS. KOLCHIN: Great. Thank you. So now, 19 starting December 6, let's see what the exchanges have 20 in store. Any adjustments to your surveillance 21 programs you've had to put into place? And how is 22 staffing coming into your thought process? Let's go 23 with Josh. 24 We'll start with you, then go to Heidi, and 25 then maybe Rob can finish it off with how FINRA is	Page 85 1 during a certain session. 2 The other part of that is the actual trading 3 part of the risk. Our exchange risk controls will 4 extend to the overnight session as they do during our 5 other trading sessions. So gross credit, duplicative 6 order, all those checks will be in place. We're 7 adding additional risk protocol for both entering and 8 clearing firms to decide and work with their customers 9 and agency to permit or not permit them to trade 10 during the overnight session. So from a risk and 11 surveillance and operational piece, those are our 12 intentions. 13 MS. FISCHER: We're pretty similar to what 14 Josh is describing. We do currently run a futures 15 market that is trading 24/5. Our surveillance team 16 will really just be extending the framework they use 17 for our futures business as well as for our pre- and 18 post-market trading in equities today. 19 We currently do already have operational 20 support working live hours in Singapore, London, and 21 Amsterdam. They're all extremely familiar with our 22 technology platform and ready to support EDGX as we 23 move equities also forward to 23/5. 24 Similar to what Josh said, our risk limits 25 will remain intact for the overnight session. We will

Page 86 1 continue to look at things in the aggregate and 2 cumulatively. And I can say methodical, by the way. 3 I just lost it before. 4 And so as we move forward, we also did the 5 same thing as far as making sure that clearing firms 6 are okay with their members trading in the overnight 7 session and set up to clear those trades. Very much 8 similar to what Josh is describing at NYSE. 9 MR. MCNAMEE: Sure. Thank you. So on the 10 surveillance side, this has been a big area of focus 11 for us as well, making sure that our surveillance 12 patterns are appropriately calibrated and focused on 13 the type of activity that happens overnight, 14 especially as that growth -- you know, there's been a 15 lot of growth there -- and as the market evolves 16 toward December and beyond. We've updated or are 17 making updates to approximately 70 of our surveillance 18 models, as well as sort of the inputs and the tools 19 that we use to monitor those surveillance patterns. 20 We're also developing new threat scenarios 21 or sort of further developing them, paying particular 22 attention to the types of risks that can be either 23 enhanced during the overnight session or otherwise 24 present. These things like account takeovers that 25 might be more present in a lower-liquidity, wider-	Page 88 1 to make sure that we're sharing information, we're 2 identifying the right issues, and we're identifying 3 the risks, you know, to help support the program. So 4 that's been really important for us as we move toward 5 December. 6 MS. KOLCHIN: Sounds good. So let's shift 7 to broker-dealer readiness. We're going to start with 8 the two new entrants to overnight trading. So Ron and 9 Todd, just talk to us about your strategic decision to 10 enter -- or to begin participating in the overnight, 11 and perhaps what you're hearing from your 12 counterparties and how that factored into your 13 decision. 14 MR. HOOEY: Thanks, Katie. So we've been 15 trading 24/6 on our international desk for the last 16 20-plus years, and then a lot of our client demand has 17 been in the pre and aft. So we do have a phased-in 18 approach. We've been having conversations with 19 clients. So a lot of what we're building now has been 20 client-driven. But we wanted to make sure, as we 21 educate and meet with clients, that the market was 22 ready, and the changes coming in December were a big 23 factor. 24 So we did want to wait for the SIP, knowing 25 the exchanges are ready, resiliency, and I think Josh
Page 87 1 spread environment, as well as manipulative trading 2 activity, of course, may be present during the day, 3 but where maybe heightened risk in the overnight 4 hours, as well as sort of wider prices and execution 5 quality concerns more generally. 6 So we've already implemented some of those, 7 particularly with the 4:00 a.m. open at the TRF. Gave 8 us an opportunity to test some of that more live 9 earlier this year, and we're definitely continuing to 10 monitor as the market evolves whether further 11 enhancements, adaptations of our surveillance programs 12 may necessary. 13 And then just a note on staffing, like 14 everyone else, we're making sure that we are staffed 15 up to account for the overnight session. A big focus 16 for us, of course, is the TRFs when they're open to 17 make sure that we have adequate coverage there, now 18 operating a real-time reporting system in the 19 overnight hours. 20 And then more broadly, we're very focused on 21 being sort of cross-functional across FINRA, given all 22 the different touch points we've mentioned already. 23 So we formed a cross-departmental working group with 24 Office of General Counsel, Economist Group, Market 25 Regulatory Services, and a number of other departments	Page 89 1 touched on it a little bit, uniformity. So I think 2 we're in a great place now, and we are moving forward. 3 And we have some demand from our APAC client base. 4 Our London desk is prepping for Q4 go-live, and then 5 hopefully the U.S. desk in Q1 next year. 6 I do want to make sure all systems -- we 7 have a little bit of a different model with our 8 introducing brokers, our correspondent clients, our 9 RIAs. It's really front to back. So they're using 10 our front ends. They're using all of our operations, 11 a lot of the disclosures and reporting. So it's a 12 team effort. And again, it's been great collaboration 13 across BNY to make sure we'll be ready for our 14 clients. 15 As far as our counterparties, the ATs have 16 been phenomenal. Hats off to them. The information 17 sharing and the access, phenomenal. We did do a few 18 webinars with the exchanges also, educating our 19 clients, making sure they knew the roadmap and our 20 plans. So that's been also a huge bonus for us. 21 But the big thing, at least for our retail 22 flow, seeing the wholesalers and the market makers 23 starting to get more active and commit more capital. 24 So that's been a good story as well. 25 MR. LOPEZ: Thanks for the question. I

Page 90 1 suppose our decision reflects, you know, the evolving 2 client needs and a broader shift to more continuous 3 markets. As was noted before, near-continuous trading 4 is already pretty common in foreign exchange, certain 5 government securities, and futures, and of course, the 6 crypto markets operate continuously. And so there has 7 been this inevitability in equities markets. And 8 while it was always my hope that it would be my 9 successor's challenge to deal with and not mine, here 10 we are. 11 I think, you know, importantly for UBS, all 12 of the infrastructure that you've been hearing about 13 being built out today was critically important to this 14 decision that we came to. The SIP, the TRF operating 15 overnight, DTCC and NSCC being available and extending 16 their hours of operation, dealing with the challenges 17 of corporate actions and having some of the 18 protections sort of sorted out were all very important 19 to coming to the decision. 20 We already support pre- and post-market 21 trading, and so sort of expanding to the overnight 22 sessions seemed like a, you know, thoughtful 23 progression and extension of our offering. We're 24 going to do it in a really measured way. And client 25 demand and market quality as they developed will	Page 92 1 clients and counterparties that, at the same time, 2 overnight liquidity is going to be distinct from 3 regular trading, and they'll be closely monitoring 4 spreads, depth, price discovery, et cetera. 5 MS. KOLCHIN: Great. Thank you. And then 6 let's go into the staffing, and then I'll bring it 7 into the people who do staff overnight. So back to 8 Ron and Todd, I'm just curious how you're thinking 9 about staffing right now and how it seems like 10 everyone's kind of taking a phased approach as well, 11 how maybe what you're thinking about for Day 1 and 12 then as you move forward. 13 MR. HOOEY: Yes. So Day 1, we're still 14 waiting to hear from FINRA. They've been obviously 15 sharing and -- but the main thing for us is the client 16 experience. So Phase 1, international, probably have 17 the follow-the-sun model. 18 But then again, like I mentioned earlier, 19 the full life cycle of the trade, making sure we have 20 the right escalation procedures and processes in place 21 so that the teams, technology, risk controls, whoever 22 it may be, are available in case they need to be 23 brought into any particular situation. 24 MR. LOPEZ: Yes. So we're treating staffing 25 as a firm-wide coverage question. We're guided by
Page 91 1 potentially expand the scope of what we offer. But I 2 would say our APAC client base in particular was a big 3 reason for our motivation. And obviously, their 4 ability to respond to events and manage risk during 5 their local trading day is important to them. 6 And then we operate a large wealth 7 management complex that's global, and our wealth 8 clients love to trade the U.S. market, and so there's 9 an appetite there, and serving them is critically 10 important to us. 11 In terms of what we're hearing from our 12 counterparties, they also see markets moving to more 13 continuous trading. Global investment flows and 14 growing participation from APAC investors was a key 15 theme from those discussions. You know, longer 16 trading windows can better serve client demand, enable 17 investors to respond more promptly to new material 18 information and breaking developments outside core 19 hours, improve alignment across international markets. 20 Hopefully, it can attract new trading 21 volumes, not just sort of moving volume around, and 22 enable prices to more accurately reflect information 23 when it becomes available, possibly reducing some of 24 the volatility into the U.S. market open. 25 I think there's a recognition from our	Page 93 1 engagement with our regulators, like FINRA, on what a 2 reasonably designed supervisory model looks like for 3 our offering. A responsible overnight service is 4 going to require appropriately registered supervision, 5 real-time monitoring and escalation where needed to 6 appropriately licensed personnel who can work from 7 locations that allow them to carry out their 8 supervisory responsibilities under the existing FINRA 9 rules. 10 Our initial automated scope is really going 11 to limit the need for discretionary intervention on 12 orders. So designated U.S. supervisors will play a 13 role. Clearly documented global support arrangements 14 should preserve accountability in our structure, and 15 we'll scale staffing as client activity and the 16 complexity of our offering develops, with training and 17 handoffs and resiliency. 18 MS. KOLCHIN: Great. Thank you. And then 19 let's move that same question -- I'm going to jump out 20 of here -- to JD and Matt because you both operate 21 overnight. So what staffing, and do you anticipate 22 having to change your plans as new entrants come into 23 the market and potentially volumes grow? 24 MR. DEL RASO: Yeah. You know, I think for 25 anything that you're investing time and resources to,

Page 94 1 you hope it grows. I think it'll be interesting once 2 the listing venues go live and then we have our first 3 real macro event to kind of test the system. 4 I think Matt put it really well earlier 5 about, you know, you have the war room set up, or it's 6 kind of like everyone needs to start manning their 7 battle stations and get ready for either a planned 8 event or an unplanned event. 9 You know, it's something that we have a ton 10 of experience in, going through a lot of different 11 macro events that could last a very, very short period 12 of time or last a long period of time. 13 I think another thing that was brought up 14 earlier, which I think is interesting here, is there's 15 a ton of optionality as well. So something that I 16 think has been said. But a good mark of a very 17 mature, sophisticated market is, I think, is 18 optionality. No one has to trade overnight, but you 19 know, it's there. 20 I think we have a great kind of response to 21 investor demand that everyone on this panel helped 22 create. And I think, for those that don't want to 23 invest the time and resources as well for this to 24 grow, there's plenty of people that are open for 25 business as well that have decided to be commercial	Page 96 1 that the industry got around that. 2 And keep in mind, we learned from that, and 3 your corporate-action protocol is very much like what 4 we've been doing for years, but it's a sharing of that 5 information. So I'm respectful of where we're landing 6 and how we're going to continue to evolve with that. 7 You know, as far as staffing, certainly 8 Robinhood, as I mentioned, we have two different 9 broker-dealers who have staffing with -- across those 10 broker-dealers. We are domestic. Everything here is 11 on soil right here. Everything is here, the vast, 12 vast, vast majority is coming from the U.S. We do 13 have a Robinhood UK, which sends order flow as well. 14 But you just have layers of coverage with 15 that, who's handling the standard operational things. 16 And then you have escalation protocols with a lot of 17 discipline and rigor in what you do and how you do it. 18 And then you have handoffs with -- I mean, even the 19 hours have overlays with that. So sensitive areas, 20 you have extra recovery and extra redundancy to it. 21 Once again, keeping that in mind. 22 These people handle overnight session. They 23 not only handle equity trading, we trade options 24 overnight for the available indices, they handle 25 options, they also cover futures. They're
Page 95 1 about it. 2 So yeah, I think we're looking forward to 3 the next kind of step of all this, especially when the 4 exchanges come in. 5 MR. BILLINGS: To complement what JD said, 6 I'd say, Number 1, Katie, you kind of stressed the 7 collaboration that's gone into this, but you've had a 8 unique advantage of having firms go before and be able 9 to do this, whether it is the market-making community 10 that is involved with that, whether it is Robinhood 11 and fellow broker-dealers who are involved in this 12 space for some time now at this point in time. So 13 we've learned a lot of lessons. And we've learned how 14 to, you know, operate in these environments. 15 It begins and ends with investor protection 16 in mind, making sure regardless of when the investor 17 engages, whether it's regular hours, extended hours, 18 overnight hours, it's a quality experience and they -- 19 and then they get the most out of that experience. 20 And by the way, to just -- I know we're 21 short on time -- the one thing that Commissioner 22 Peirce, there's one thing that really strikes you. I 23 have to say, I'm really appreciative of the corporate- 24 actions effort that has gone into that. That is your 25 most -- one of your most sensitive areas, and the fact	Page 97 1 appropriately licensed to be able to handle all of 2 those things and have escalation protocols to the 3 appropriate individuals regardless of the asset class 4 that they're, you know, monitoring if something were 5 to cause any sort of escalation. 6 Once again, resiliency, keeping the customer 7 experience front of mind here. 8 MS. KOLCHIN: Great. Thank you. And so it 9 is all about the investors, so let's talk about 10 investor demand. Let's start on the institutional 11 side. 12 So we'll throw it out to JD, Ron, and Todd. 13 What do you think it's going to look like on Day 1 14 from institutional demand? And is it going to be 15 broad-based or is it a specific type of client? What 16 are you expecting? 17 MR. DEL RASO: Sorry to jump out of order. 18 You know, it would be interesting to see that if we do 19 see more institutional demand, we haven't necessarily 20 up to this point. You know, I think -- and if we do, 21 it's probably going to be a more DMA-type option. I 22 think, again, like for the institutional community as 23 well, it's nice that there's an option. 24 To the extent that there's a lot of -- and, 25 you know, everyone can appreciate the amount of

Page 98 1 infrastructure that's already in place for a lot of 2 different asset managers, and they have to make that 3 decision whether it's worth trading overnight. And it 4 could very well be that it might not be for a period 5 of time. 6 So it should be interesting to see whether 7 it's skewed more towards asset managers or maybe 8 there's some hedge fund clients that have a little bit 9 different investment horizon that might want to be 10 active overnight when there are prices on a screen to 11 interact with. It should be interesting to see. 12 However, from our perspective, we haven't necessarily 13 seen a huge uptick in requests for it. 14 MR. HOOEY: We've had very, like, de minimis 15 outreach from our institutional clients. They are 16 anticipating with the SIP going live in December, and 17 some of the other changes around resiliency and 18 transparency and best execution, if volumes start to 19 spike, I'd expect them to be a little more active. 20 And I agree with what JD said. It's going to be low- 21 touch DMA, at least to start. And like our 22 international desk I mentioned earlier, maybe leverage 23 lessons learned there to support more of a high-touch 24 offering down the road. 25 But again, out of the gate, I think it's	Page 100 1 don't I start with him. If you can kind of lay out 2 for us, you know, we all generalize that it's all 3 Asia-PAC retail right now. 4 Is there also other regional demand? We've 5 heard things about U.S. West Coast, that type of 6 thing. And between you and Matt and Ron, maybe you 7 can also talk about the differences between a self- 8 directed and versus retail using an advisor, and sort 9 of just your expectations for where we're going to go 10 from here as the exchanges come into the ecosystem. 11 MR. BILLINGS: Yeah. Thanks, Katie. Well, 12 for us it's self-directed investors. Advisors are not 13 utilizing this overnight session at this point in 14 time. That's fine. Like we said, the optionality is 15 there. If anyone wants to trade, they'll find their 16 way to it. 17 If they think that makes sense and certainly 18 we're -- you can't help but be excited about what's 19 occurring here because the more participants that are 20 in the market, more competition, likely the more 21 liquidity, this is a win. 22 So hopefully it just is this impetus to get 23 more people engaged with that. Win for the retail 24 customer at the end of the day, favorable environment 25 for that. So we are hopeful that things continue to
Page 99 1 going to be a slow ramp and curious how it plays out. 2 MR. LOPEZ: Yeah. I mean, I think the 3 feedback we're getting -- and by the way, you have 4 some great institutional representatives here today, 5 so I'm curious to hear what they have to say. But I 6 think it's going to be limited. The large asset 7 managers really prioritize liquidity, market impact, 8 execution quality. 9 And so until that becomes, you know, 10 something that is attractive, I think it will continue 11 to be more of a ad hoc situation. And so the sessions 12 are more likely to be used to selectively reduce risk, 13 do some hedging, some event-driven repositioning, and 14 really facilitating international clients. 15 I think, you know, the strongest current 16 interest we see is from Asia, Asia-based investors, 17 including hedge funds. And certain electronically 18 sophisticated hedge funds that have -- they're more 19 quantitative and their investment and risk-management 20 needs kind of extend more naturally beyond the U.S. 21 trading day. But I think it will be limited. 22 And again, I agree. I think it's more of a 23 DMA-style offering on Day 1. 24 MS. KOLCHIN: Okay. Great. Thank you. So 25 let's shift to retail. And Matt's right here, so why	Page 101 1 trend this way. We're excited about where we're at 2 today, but things will continue to trend this way. 3 That's nothing but positives with this. 4 MS. KOLCHIN: JD, you're on. 5 MR. HOOEY: I'll just say volume begets 6 volume. I don't anticipate RIAs coming out of the 7 gate too fast, but gradual once they have more 8 confidence. And there might be like an episode or 9 like a macro event or something that would trigger 10 interest, and they'll look to the screens and see an 11 opportunity that they can access, and that might set 12 off the chain. 13 And again, I think once the SIP is live, 14 exchanges are trading, more active participation, some 15 of their habits might change a little bit, and they 16 might start kicking the tires, maybe trying a market- 17 on-close and maybe an order in the after-hours to see 18 how the execution quality looks. 19 But again, I think out of the gate, it's 20 going to be watch and learn. 21 MS. KOLCHIN: Great. Thank you. All right. 22 So nothing builds confidence like strong risk 23 management and investor protections put in place. 24 Right? So maybe we'll just throw a couple at each of 25 you, Matt, Ron, and Todd. Maybe we'll just go down

Page 102 1 the line on this. 2 Sort of what types of adjustments have you 3 had to make to surveillance programs to meet your 4 regulatory obligations overnight? And what are you 5 doing to ensure investor protections are in place for 6 the overnight session, whether that's disclosures or 7 whatever you're looking at? 8 MR. DEL RASO: You guys okay? 9 MR. BILLINGS: Okay. Fair question with all 10 that. Well, Number 1, we talked about earlier, we do 11 have a quarterly review process in which it revolves 12 around the price of security, market capitalization, 13 and the bid-ask spread with that. So that's a 14 quarterly process in which we, you know, decide on 15 eligibility for securities for that next quarter. So 16 that starts with that. 17 Not only do we -- we don't necessarily rely 18 on industry halts, we have our own internal halt 19 protocols that we utilize with that. This is belt- 20 and-suspenders type of approach. 21 Once again, going back to the client 22 experience, you want to manage operational risk and 23 you want to make sure that any time that investor is 24 engaging, that's a quality experience with that. 25 FINRA has a robust regime of disclosure. FINRA Rule	Page 104 1 client gets that quality execution experience. 2 MR. DEL RASO: Yeah. You know, by and 3 large, the way our platform is designed is for multi- 4 region, multi-asset trading. So with that in mind, it 5 was -- it's, you know, more of a focus on the 6 overnight session of how we want to adapt our normal, 7 say, market access controls to that session. And we 8 have a lot of experts at the firm that are making the 9 decisions on how we want to see order entry, how we 10 want to evaluate different client limits. 11 But I think something that's very helpful in 12 all of this is having a standardized set of guidelines 13 to the extent that you can. I know it's really 14 difficult, and I can only imagine some of the 15 Herculean task people have -- limit up-limit down, for 16 example. Every situation is kind of different. So to 17 the best that we can, with a standardized platform and 18 kind of operating procedure, to adapt to that market 19 structure, especially for overnight, has been 20 difficult, but that's kind of how we've approached it. 21 MS. KOLCHIN: Ron and Todd. 22 MR. HOOEY: Our disclosures for our pre and 23 aft are probably the longest part of our disclosure 24 statement on our website, so we definitely take it to 25 heart. I expect for the overnight session, it's going
Page 103 1 2265, their extended trading hours disclosure, 2 certainly, we abide by that and present it as it 3 should have -- should be at appropriate times with 4 that. 5 We are limit orders only. It's whole 6 shares, no short selling. And we've done a really, 7 really nice job of eliminating single points of 8 failures. There's multiple market makers, there's 9 multiple ATS, and it only gets better as more people 10 get engaged with the marketplace with that. 11 Best execution, that was noted several times 12 in the earlier speeches by the commissioners. 13 Rule 5310, your best execution rule is 14 active whenever, wherever you execute a security. It 15 never turns off. You have an obligation. You have 16 protocols in place and to conduct your regular and 17 rigorous anytime you're transacting order flow. 18 So certainly, Robinhood does that. We have 19 our protocols in place. We monitor this order flow. 20 We have exception processes. Obviously, it's 21 different. You don't have a SIP, but use market data 22 that's available to you with that. And it's a part of 23 your capstone, your best execution meeting in which 24 you're discussing this order flow as well as any other 25 pocket of order flow that you do to assure that your	Page 105 1 to be the same. So definitely education and letting 2 clients know some of the risks. The other big factor 3 is the pre-trade. So a lot of it's customizable. So 4 if clients want to limit the hours, securities, order 5 types, we provide the tools for them to -- for our end 6 clients to customize those settings. 7 And then a lot's going to depend on the 8 cycle. So now we're trading in the 23/5 world. When 9 do we -- what's the cutoff time for the reports? 10 What's the start time for our T+1 reports, our post- 11 trade new T+0 evaluation? So it's all being -- being 12 looked at. And again, pre and aft, we have the 13 similar metrics that we do for the primary. 14 Obviously, stuff like EQ is a little wider. 15 But again, educating clients that that's expected 16 with the limited liquidity, I think it should be a 17 good experience for them. 18 MR. LOPEZ: Yes. So I think on the 19 surveillance and, I guess, broader regulatory 20 obligations front, we have a foundation with which to 21 work upon. We already have surveillance framework set 22 up for the pre and post. And so extending that into 23 the extended hours, calibrating, you know, in a 24 similar way, but then learning and evolving as we 25 understand how we might need to think about uniquely

Page 106 1 is something that we're focused on. 2 On the disclosure front, I mean, we've long 3 included disclosures on extended-hours trading in our 4 institutional order-handling letters, which we send 5 out every year. This will be an entitlement-based 6 setup. And so we'll use that opportunity to remind 7 people of the risks that come with it. And that's 8 part of our procedures. I think we're going to limit 9 the scope of what is available. And so having limits 10 on every order will be part of the experience at UBS. 11 And so that will be part of how we control it. 12 And I think from a best ex. perspective, you 13 know, we already look at the context of the 14 environment when we're executing the trade. So we 15 look at pre- and post- differently than we do the core 16 session today. And I reasonably expect that's what 17 we'll do in the extended-hours session as well. And 18 again, we'll learn, and we'll make this process better 19 and more robust over time. But we have a good 20 starting point. 21 MS. KOLCHIN: Great. Thank you. And then 22 Rob, I saw you smile when Matt made his best ex. 23 comment. So perhaps you can share any recommended 24 guidance FINRA is thinking about for firms who are 25 going to operate in the overnight when it comes to	Page 108 1 trading a particular security, your best ex. may look 2 different, right, in terms of evaluating other venues 3 that may not be. But it always applies, and there's 4 always the obligation to execute, you know, in 5 accordance with the terms of the customer's order. 6 But we do, of course, recognize, again, why 7 we're here today, that this is an evolving market 8 overnight, and so we're keeping a close eye on how 9 extended hours and especially the overnight session 10 develops, considering further guidance in this area. 11 So I would put in a plug that we have a 12 notice that's currently out for comment. Comments are 13 due next Friday, September 25th, where we're asking 14 for comment generally on our best execution guidance 15 and how we can modernize it for other reasons as well. 16 But there is a section specifically asking for 17 comment on extended hours and overnight trading and 18 what types of guidance might be helpful for firms as 19 we consider modernizing that guidance. 20 So definitely please take a look at that and 21 consider throwing in a comment, but firms should 22 definitely expect more on the best execution side as 23 we move forward. 24 MS. KOLCHIN: And I know you will be hearing 25 from people on that one. So that's along the lines of
Page 107 1 best ex. 2 MR. MCNAMEE: Thanks. No. I think actually 3 Matt said it very well, stole exactly what I was going 4 to say, which is, you know, best execution is a key 5 investor protection requirement. It's a big focus for 6 FINRA and for the Commission, I know. And it does 7 apply regardless of when a customer order is received 8 or executed. It's always on. Right? 9 So trading is already happening outside of 10 regular hours and has for many years in various 11 contexts, and it's always applied. So, you know, it's 12 a principles-based rule, and it's meant to, as Todd 13 said, account for the circumstances, the character of 14 the market, accessibility of quotations, market 15 conditions. So those are all already sort of built 16 into the rule and the principles and how you apply 17 best execution. 18 I would note there's also a specific part of 19 the rule about securities with limited pricing 20 quotation information, which could be relevant 21 depending on circumstances in an overnight session. 22 And we do recognize, and the rule 23 recognizes, that best execution looks different 24 depending on the circumstances. 25 For example, if there's only one venue	Page 109 1 the more to come. And one -- just last thing before 2 we move on to my closer here on liquidity, but in the 3 more to come on the broker readiness side, I'd be 4 remiss if I didn't note one other work stream that's 5 still ongoing. 6 We're working with brokers, particularly 7 through their prime desk and their securities lending 8 desk, on the handling of net capital and margin 9 requirements in the overnight sessions. So you will 10 hear more about that to come. 11 Now Hubert, BlackRock was one of the first 12 people actually to put out right away a market 13 structure white paper on overnight trading. So can 14 you talk to us about kind of how you're thinking about 15 liquidity, what you see now, what you think could 16 grow, and just sort of how that played into your 17 decision to take more of what I call a wait-and-see 18 for the Phase 2 approach? 19 MR. DE JESUS: Sure. So we're thinking 20 about how liquidity is going to evolve from here. What 21 we expect to see happen or what we expect right now is 22 that most of the liquidity overnight, the baseline 23 levels of liquidity, are going to be highly retail- 24 driven or retail-led. And it's really, you know, the 25 foreign investors as well as, like, retail investors

Page 110 1 that are really going to be the bulk of the volume. 2 Initially, institutional activity is likely 3 to be very event-driven or reactive in nature. Right? 4 When news comes out -- maybe in a particular stock -- 5 that's when there might be more activity in those 6 securities. And it's going to be very hard to have a 7 routine process where you're trying to rebalance 200 8 names when liquidity is really concentrated in 15 9 names overnight. 10 And so for those reasons, when we're 11 thinking about how we're going to participate or react 12 to overnight markets, we have to think with a 13 fiduciary hat on because we have to think that -- we 14 have to assess whether overnight sessions exhibit 15 sufficient liquidity and market quality to ensure that 16 it can handle institutional-sized order flow as well 17 as deliver appropriate execution outcomes for our 18 clients. 19 We don't believe that will necessarily be 20 the case on Day 1. But that said, we're going to 21 continue to monitor how liquidity develops overnight, 22 looking at the volume, spreads, and really what 23 trading costs might look like overnight to assess 24 whether -- when it would be appropriate for us to 25 start participating.	Page 112 1 listening, and thank you to all of our panelists and 2 to Jon. 3 DEPUTY DIRECTOR KROEPER: Yeah. Thanks to 4 all the panelists, and special thanks to Katie for 5 taking the lead role as moderator here, and also for 6 all her efforts in terms of galvanizing the industry's 7 response. And thank you to all. Especially, I mean, 8 going into the conversation, you know, it inspires a 9 lot of confidence in terms of the preparations for 10 December 6. So thank you all, and we'll be back after 11 lunch. 12 DIRECTOR SELWAY: So the flexible and 13 always-on nature of best execution, that's a -- that's 14 a big takeaway. So thanks, everybody. As Jon said, 15 we're going to break for lunch. We'll be back here at 16 1:15 p.m., please. Thank you. 17 (Whereupon, a luncheon recess was taken.) 18 DIRECTOR SELWAY: All right, folks. Why 19 don't we take seats. And why don't we invite Panel 2 20 panelists and moderators to come up. So before we 21 launch into it, I'll make an administrative 22 announcement. If anyone's lost a single AirPods, they 23 can retrieve it at the command center sort of back 24 behind you all. 25 So second panel today, we're going to talk
Page 111 1 In the meantime, I think we're doing a lot 2 of work internally to think about our operational 3 workflows, technology needs, staffing requirements, to 4 really evaluate, you know, and make sure that we'll be 5 prepared when that time comes. 6 And part of that is also thinking about, 7 like, what counterparties are going to be ready to 8 participate. I know a couple of the brokers here have 9 indicated that they'll be ready, but at the same time, 10 what we've also heard is there are other brokers that 11 aren't making the investment to participate on Day 1 12 because they're not seeing a lot of concrete 13 institutional demand just yet. So those are the sorts 14 of things that we're thinking about. 15 MS. KOLCHIN: So a bit of a chicken-and-egg 16 there, Hubert. Great. Thank you very much. So we 17 managed to get ourselves back on time. Very happy 18 about that. I don't want to get in trouble with 19 Jamie. So thank you to everyone, and I hope you 20 learned a lot about kind of where we were overnight, 21 what everyone's ready to do. We've got green lights 22 on the infrastructure for December 6. 23 We've got lots of excitement from people 24 going Day 1 in Phase 1. And then more to come from 25 people entering in Phase 2. So thank you for	Page 113 1 about resiliency in a 24-hour market. This panel will 2 be expertly moderated by Jim Toes of STA and Patrick 3 Norton, division colleagues. So gentlemen, take it 4 away. 5 PANEL TWO: RESILIENCY IN A 24-HOUR MARKET 6 ASSISTANT DIRECTOR NORTON: Thanks, Director 7 Selway. I'm Patrick Norton, Assistant Director in the 8 Division of Trading and Markets. Panel 2 will explore 9 operational resiliency in a 24-hour market, including 10 systems readiness, Regulation Systems Compliance and 11 Integrity concerns, failover and capacity planning, 12 market data continuity, shortened maintenance windows, 13 a little bit of cybersecurity, and even a little bit 14 of staffing, even though Panel 1 covered some of that 15 from a different angle. 16 We're really concerned about how do we 17 prepare for overnight operations on December 6, what 18 do we need to be ready for when something occurs in 19 the middle of the night, and who's going to be 20 responsible for answering those questions. So Jim? 21 MR. TOES: Yeah. This is the everyone has a 22 plan until they get punched in the mouth panel. 23 Right? Okay. You know, obviously, our markets, they 24 are highly resilient by every measure. You know, 25 public forums like this where people can collaborate

Page 114 1 and share ideas contributes to that resiliency. 2 And obviously, like Patrick mentioned, we're 3 here to kind of just ensure that the resiliency that 4 we have in the pre-, post-, and regular sessions 5 continues into the overnight as well and trying to 6 identify whatever unique things need to be identified 7 on it. 8 Just one broad disclosure I just want to 9 provide here is that some of these questions that we 10 kind of ask around resiliency are a little bit 11 sensitive. So, you know, the panelists here, when 12 they are giving answers, are not necessarily giving 13 the answers for, like, what their particular firm is 14 doing. 15 It's more around what firms should be 16 thinking about, firms that have similar business 17 models as theirs. The goal here, obviously, again, is 18 education. We want the panelists to feel that they 19 can speak freely without getting unnecessarily tied up 20 in, you know, things that are maybe going up in 21 particular at their firm. Okay? 22 So with that, if we can just go down the 23 road and we'll give, you know, one-minute intros, and 24 then we'll get going into the questions. 25 MS. CODY: Great. I'm Diwa Cody. I work on	Page 116 1 to this special occasion is closely related to -- I'm 2 sorry -- Samsung's pioneering role in the U.S. 3 extended-hours trading. 4 Back in 2022, Samsung Securities launched 5 the first retail brokerage service in the world to 6 trade all the NMS securities in real time with a 7 mobile trading app 22 hours a day, powered by Blue 8 Ocean ATS and Jane Street. Now four years later, the 9 industry prepares for the next evolution toward 24- 10 hour trading. I would like to sincerely thank the 11 Commission for inviting Samsung Securities to this 12 important roundtable for the future of the U.S. 13 capital markets. 14 MR. LARD: My name is Todd Lard. I'm the 15 Managing Director of Trading Operations at Charles 16 Schwab. That incorporates multiple asset classes, 17 including our current overnight trading offer, as well 18 as regulatory reporting. And I'd like to echo the 19 thanks to Jim and Patrick and the Commission for 20 inviting, and I look forward to the discussion. 21 MR. MACK: Yeah. Thank you to the 22 Commission, Trading and Markets staff, and Jim, 23 Patrick, and my fellow panelists for having me. My 24 name is Chuck Mack, Senior Vice President at Nasdaq. 25 I cover a few things for Nasdaq in North American
Page 115 1 market structure and policy at Jane Street. Jane 2 Street is a global liquidity provider in equities, 3 ETFs, options, fixed income, and other markets, and we 4 are an early participant in the U.S. equities 5 overnight session. 6 As a liquidity provider, our role is to 7 respond to market demand, so we're focused on a 8 positive, resilient session across all of the kind of 9 trading sessions. 10 Many thanks to the Commission for having us 11 and for inviting us. 12 MR. EVARTS: Hi. My name is Nat Evarts. I 13 run Americas Trading at State Street Investment 14 Management. I'd like to thank the Commission for 15 inviting us, and I appreciate sitting up here with 16 colleagues. I'm looking forward to the conversation. 17 MS. JUNG: I am Jiyoung Jung, CEO of Samsung 18 Securities of America and a U.S. representative of 19 Samsung Securities of Seoul, South Korea. Samsung 20 Securities is one of the most trusted securities firms 21 in South Korea among high-net-worth clients with more 22 than 330,000,000,000 assets under management. And we 23 also provide sales and trading and IB capabilities 24 too. 25 And the reason why Samsung has been invited	Page 117 1 markets: strategy, operations, transformation, and 2 market structure. 3 And I mentioned those four things because I 4 think it's clear that what we're talking about here 5 goes across all those four areas and then some. 6 Myself and Nasdaq are not ambivalent. I think one of 7 the commissioners mentioned that some people were 8 ambivalent towards 23/5 earlier today. We are not. 9 We were not a first mover getting involved. 10 We listened to the market, listened to our clients, 11 and then got very involved. We're pretty enthusiastic 12 about where this might go and how it might grow and 13 the coordination across the industry. And I'm looking 14 forward to the conversation. Thank you. 15 MR. SOSNICK: Hi. I'm Steve Sosnick, Chief 16 Strategist at Interactive Brokers. Members of the 17 Commission and the committee, fellow panelists, 18 attendees, it's a pleasure and honor to be part of the 19 discussion. You know, we at Interactive Brokers, we 20 have the EOS ATS overnight. But we've been at this 21 for a long time. 22 First, in my personal life, I was trading 23 Australian stocks for U.S. customers when I started in 24 the business almost 40 years ago. And my wife stayed 25 married to me despite that, maybe because I could get

Page 118 1 up in the middle of the night with the kids when they 2 were little since I was up anyway. 3 But when I joined our firm 30 years ago, we 4 already had regional offices in Zug, Switzerland, and 5 Hong Kong. So for me, we've been thinking 24 hours, 6 you know, for as long as I can remember and certainly 7 for my 30-year career at IBKR. So I hope I can add 8 some interesting points to the discussion as a result. 9 MR. STEELE: Hi. I'm Brian Steele, 10 President of our Clearing and Securities Services 11 businesses at DTCC. DTCC is the critical market 12 infrastructure for the U.S. Equities and Treasury 13 market. We are actively involved in helping to 14 facilitate 24/5 by virtue of the operation of our 15 clearinghouse and the move towards a continuous 24/5 16 clearing infrastructure that we have operated since 17 June of this past year. 18 So excited for today's panel. Thank you to 19 the Commission for organizing the session and excited 20 to be here. 21 MR. TAYLOR: My name is David Taylor, Chief 22 Executive Officer of Exegy. And I'd just like to 23 thank the Commission as well as Patrick and Jim for 24 having me on this panel. 25 Exegy is a provider of a high-performance	Page 120 1 So I'll echo Chuck. We're all very excited 2 to talk about 23/5. 3 ASSISTANT DIRECTOR NORTON: Great. Thank 4 you. Well, starting with Nasdaq, since you can speak 5 for both an exchange and a SIP, what's readiness 6 looking like? How are you preparing for resiliency? 7 MR. MACK: Yeah. So -- there are 8 instructions. I should have just read them and then 9 pressed the button. Yes. So I think we've heard 10 already quite a bit about how a lot of green lights, I 11 think, as Katie was saying earlier, so we are on track 12 across both our role as a processor of the Tape C SIP 13 and also our role as operating an exchange. 14 I mentioned in my intro that we were not a 15 first mover, but based on feedback from our clients in 16 the market, we got very involved very quickly based on 17 feedback from the APAC region and from folks like 18 Jiyoung and from clients in the U.S. and our 19 competitors and infrastructure providers as well. 20 The SIP is really the securities information 21 processor. The consolidated tape is really one of the 22 key cogs in the infrastructure that underpins the 23 great markets that are the U.S. equities markets. And 24 so it was one of the leading drivers to determine sort 25 of when we'd go live and sort of the structure of the
Page 119 1 market data and trading platform. We serve as a 2 technology and operational partner with many global 3 banks, institutional and retail brokers, as well as 4 asset managers and principal traders and exchange and 5 ATS operators. 6 We operate today 24/7 in order to support 7 our clients with a follow-the-sun service model, and 8 that's across global equities, futures, listed 9 derivatives, currencies, and treasuries. 10 I think relevant to the conversation today, 11 for the past 25 years, we've developed particular 12 expertise in purpose-built hardware technology that 13 really helps address some of the resiliency topics 14 that we will talk today with efficiency, but also 15 deterministic performance that help our partners, our 16 clients really take something that's a difficult 17 variable in execution quality and make that a 18 constant. So thank you. 19 MR. ZUBA: Hi. My name is Quito Zuba, Chief 20 Operating Officer at MEMX. Thanks, Jim, Patrick, and 21 the Commission. At MEMX, we run two options 22 exchanges, one U.S. equities exchange, and as well we 23 provide market technology to some of the folks that 24 we've already talked about, the Blue Ocean ATS and 24X 25 Exchange.	Page 121 1 day, which has been talked about pretty extensively, 2 you know, the 8:00 to 9:00 p.m. pause, and then the 3 23/5 structure. And so all of that was really driven 4 at a collaborative level through the NMS plans that 5 administer the SIPs. 6 And I have to say it was really, generally 7 speaking, a pretty pleasant experience to be involved 8 in that and to have the level of collaboration and 9 coordination across the industry and within those 10 plans. Anyone who's ever been involved in one of 11 those where you're operating something as a committee, 12 it can be very challenging. It can move slowly. I 13 think in this case the industry really came together 14 in a very good way. And so from a SIP perspective, a 15 lot of confidence in that December 6 date. I don't 16 think any of us are looking at it as a target. We are 17 looking at it as the go-live, and so that's a very 18 positive thing. 19 And then just for a second on the exchange 20 operation side, there's a lot of planning that goes 21 into a thing like this. We've done a lot of big 22 things already this year that we kind of forget about. 23 I'll throw out an example, fractional shares on a 24 consolidated tape. Like, people forget that that even 25 happened, and that was actually a big effort as well.

Page 122 1 I think of this effort both for us and the 2 industry somewhat like when we moved clearing from T+3 3 to T+2 and then again to T+1, which took a lot of that 4 coordination and planning. And we spend a lot of time 5 being really meticulous about this planning. Because 6 we -- the market is so much more dynamic than it was 7 20 years ago or however many years ago when we went 8 from 4:00 a.m. to 8:00 p.m. And so there's a lot of 9 moving parts outside of just what we're talking about 10 today. 11 And so a lot of what we do is sort of 12 planning for all of those eventualities and all how 13 these things intertwine. And a lot of it also has to 14 do with the feedback we get directly from our clients 15 and from the market. So that -- I know I've said it 16 like three times already -- but that collaboration 17 really couldn't have been better or be more important 18 for something this large. It's going really well, and 19 we feel really confident in the December 6 date. 20 ASSISTANT DIRECTOR NORTON: Thank you. So, 21 Quito, MEMX operates kind of like an exchange as a 22 service and ATS as a service. You've been running 23 23/5 models for over a year at least. What can you 24 say about readiness from the MEMX perspective, 25 resiliency as well?	Page 124 1 everyone's in this together. We're all trying to do 2 the same quick turnaround on systems that, you know, 3 sometimes -- everybody has a system that they haven't 4 looked at in a long time and maybe doesn't pay the 5 bills. It does just enough. 6 But I think holistically, we've had to take 7 a look at every single process that you run and make 8 sure that it's fine-tuned for that turnaround. And I 9 think that's a unique thing that everyone up here in 10 the industry has to deal with. 11 So I think we're all pretty prepared. I 12 think December 6, you know, I don't sense a lot of 13 fear. I think the unknowns will happen, but also the 14 preparedness with some of the LULD Committee stuff. 15 We all know how to talk to each other when there are 16 problems. We do it at 4:00 a.m. a lot. You know, 17 that will just continue, and we'll get to know each 18 other even better at 2:00 and 3:00 and 1:00 a.m. 19 ASSISTANT DIRECTOR NORTON: So David, Exegy 20 is a leader in the market data space. I understand 21 that you already have a consolidated feed for what the 22 holistic view of the overnight session looks like 23 already. 24 Can you talk a little bit about what you're 25 thinking with respect to the hour when exchanges will
Page 123 1 MR. ZUBA: Yeah. Thanks. We feel really 2 prepared. I think when we began the market technology 3 service, our first client was crypto exchange EDX 4 Markets. So we ran 24/7 sort of from the beginning. 5 I think we've also been operating these markets 24 6 hours, 23/5, for the last year or so. 7 I think what's interesting is about, like, 8 the cohesiveness of all the markets together. It's 9 nice to pull the car into the shop and have the eight 10 hours to tune it up and then put it out again. Right? 11 And so we're sort of operating three independent cars 12 all at the same time. 13 And now we're doing Indy 500 pit stops, and 14 everything has to get taken care of relatively 15 quickly, and that goes across the markets. And I 16 think if anyone's ever sat through some of those SIP 17 committee meetings, they're not always the place that 18 you find a ton of consensus right away. 19 But I think in this case, when we were 20 talking about what we saw as, you know, what would we 21 need, what would we like to see for us to feel really 22 good about our turnaround, that reference data piece 23 was something that when we brought and we saw 24 everybody was really excited about and gravitated 25 toward, we were happy with that, and we felt like	Page 125 1 be paused and you're still running and how all those 2 data points come together? 3 MR. TAYLOR: Yeah. Thank you, Patrick. I 4 mean, I think the short answer to that question is 5 we'll use the tools that are already in place to deal 6 with a lot of the asynchrony that's already in the 7 national market system. 8 So a lot of our clients, just to level set, 9 you know, we are feeding machines data, not just 10 screens for humans to look at. And a lot of those 11 machines are driven by the proprietary feeds that the 12 exchanges publish or ATSs publish. And there's 13 asynchrony between how those -- how the NMS stocks are 14 going to go through different trading states across 15 those feeds, whether it's going from pre-market into 16 an auction cycle, auction cycle into full market 17 trading. 18 And so we already have to deal with this 19 asynchrony, especially when we're doing things on 20 behalf of our clients like computing the national best 21 bid and offer from the proprietary feeds. 22 So today, the way it works with the ATSs 23 that have this hour of operation when other markets 24 are down, the way we have to display trading state and 25 the way we have to deliver that information to

Page 126 1 machines as well as screens already deals with the 2 asynchrony in the markets. 3 And all the trading state is dealt with on a 4 per-market, per-instrument status. And I would say 5 our team, who spends a tremendous amount of time 6 thinking about how do you model a consistent view of 7 the markets across asset classes, across trading 8 venues, spends an inordinate amount of their time. 9 And I think this is true for everybody who trades on 10 getting trading state correct. 11 And so we've been through a lot of that work 12 already in the way that the markets operate today. 13 It's how we are dealing with the overnight markets 14 now. And in the computation of an overnight BBO, 15 we're using a lot of the same machines and mechanisms 16 that are in place for computing the national best bid 17 and offer during regular trading hours. 18 MR. TOES: That's great. So Steve, 19 obviously, besides just your personal experience of 20 trading overnight when you were younger, IBKR 21 obviously has been in the space for a while. Can you 22 just kind of share just some thoughts, like some best 23 practices that you can help prepare other firms, other 24 broker-dealers looking to get into this space? 25 MR. SOSNICK: Sure, Jim. And I'm going to	Page 128 1 you know, than it is, let's say, for someone in the 2 middle of the night to get ready. 3 You know we -- each region has management, 4 senior staffers with broad experience, and we have 5 global policies for surveillance and risk management 6 throughout the organization, of course, respecting 7 local regulations and customs. And I think that's 8 very important too, is you need to define your 9 parameters for risk management. 10 You know, what are you going to do -- you 11 know, most people are not going to have market orders, 12 but what do you do with a marketable limit order that 13 will cross a wide bid-ask spread and then the customer 14 realizes, oh, that was a crappy execution. Well, what 15 do you do if that creates a poor-quality result or a 16 limit up-limit down situation? 17 You know stop orders, margin calls, low 18 volume -- what if these are done off of low-volume 19 trades in a thin market? These are all -- what do you 20 do? What if a big move is -- how do you know if a big 21 move is a result of a fat finger, an inefficient news 22 disclosure, or something else? And so these are the 23 type of things you have to be prepared to recognize. 24 And, you know, as you said in your opening, 25 you don't know this until you get -- you don't know --
Page 127 1 operate under your initial disclaimer. 2 MR. TOES: Yes. 3 MR. SOSNICK: I'm speaking very generally 4 because I can't discuss our specific business 5 practices. But I guess we're a little spoiled because 6 we've been running essentially 24 hours. When I 7 joined to help manage our options market-making 8 business, I already had counterparts doing options 9 market making and later customer execution based out 10 of Zug, Hong Kong. We now have 10 other countries 11 involved. We represent 150 market centers, 36 12 countries. So we're set up to do this. 13 I think I hate to say this -- but I think 14 for those who are thinking you can man this locally, 15 you do have to think about maybe expanding your 16 horizons. 17 Do you want a junior person -- because, you 18 know, whoever is going to be doing this at 2:00 in the 19 morning is going to be your most junior employee and 20 who's going to be sleep deprived. Do you want that 21 person basically with their fingers on the button, 22 proverbially, or someone who's in a local market 23 center who's got regional experience, maybe not U.S. 24 experience, but it's -- we found it's easier to get 25 those people registered in the U.S. than it is to --	Page 129 1 you don't have -- you have a plan until you get 2 punched, and you're going to have to -- everybody's 3 going to have to learn this stuff in real time. 4 And it is a matter of cooperation and 5 management and basically, taking the best practices 6 that are working for you now, you know, expand those 7 into the broader hours, and then realize that, look, 8 everything is just going to be a little bit tougher. 9 Because of the time, because of the liquidity, because 10 of the unique market circumstances that will persist 11 in that period of time. 12 MR. TOES: Okay. Jiyoung, let's switch over 13 to you. I mean, we saw this slide earlier today as 14 far as how much activity is coming from Asia-PAC on 15 this. This is kind of like a two-part question. 16 One is, like, what type of investors do you 17 think in Asia-PAC will be looking to access our 18 markets? You know, here in the U.S., we kind of have, 19 like, we have institutional investors, we have 20 investors that maybe have a broker and RIA in between 21 them and making a decision. And we obviously have a 22 very large population of self-directed. So if you 23 give me a sense of that. 24 And then also, obviously, with the exchanges 25 coming into the space, is that going -- what's the

Page 130 1 opportunity there? Are more people, more countries 2 going to be more comfortable with having their 3 citizens trade in the U.S. market? 4 So it's a two-part question. One is, can 5 you describe the type of investor that you think is 6 going to find this attractive? And then the second 7 part is that with the exchanges and DTCC and SIP being 8 the core infrastructure, does that bring other 9 countries in? 10 MS. JUNG: Thank you. I can share that 11 mainly from the experiences in the APAC market. 12 Institutional investors or RIA are a little set aside, 13 but we need to focus on the retail community first. 14 And the APAC demand can be explained into 15 two segments: existing -- the existing fans of the 16 nighttime trading from Asia and new investors part. 17 For existing fans, for existing investors, 18 we expect that demand to be highly irreversible. 19 Irreversible means once an investor who used to trade 20 the U.S. stocks at night becomes accustomed to the 21 daytime trading, there is very little reason for them 22 to go back to nighttime trading anymore. 23 For new investors, we may call it a mass 24 market for the first time. So suppose that there's 25 Asian investors in Asian time trade the U.S. equities	Page 132 1 such as in Hong Kong, in China, in Japan, in 2 Singapore. They all have different standards in terms 3 of their resiliency or compliance. 4 So in that context, regular exchanges can 5 provide an alternative that gives comfort, not only to 6 the APAC retail community, but also to the retail 7 regulators from a resiliency perspective. 8 Oh, I have another question to cover. 9 Lastly, the last question I should cover, will order 10 flow increase on Day 1 because of confidence lead 11 market are there? So I am positive about this 12 opportunity. 13 When Samsung Securities opened the first 14 U.S. stock trading service in Korea back in 2022, I 15 remember that February 7, the public reactions were 16 larger than expected from Day 1. And the portion of 17 the participation to the daytime trading in Samsung 18 Securities has been generally from 20 percent to 25 19 percent, and it is still so. 20 So I can expect very positively about the 21 reactions and the participation from the APAC market 22 to this 23/5 agenda from Day 1. I think positively. 23 MR. TOES: Okay. Okay. Diwa, let's pivot 24 to you. So I mean, based on those remarks, you know, 25 Chairman Atkins made a comment in his opening
Page 131 1 at the nighttime. We cannot really call it as a mass 2 market. It's a small portion of people that I can 3 call them a fence. And so this goes beyond individual 4 preferences, but it is about human nature to be active 5 during the day and sleep at night. 6 Based on Samsung's expertise -- experience, 7 the investor profile who adopted daytime U.S. stock 8 trading was not limited to the sophisticated investors 9 or early adopters. They were ordinary people, our 10 normal neighbors, like my mother-in-law. 11 Also, I'd like to mention about the second 12 question. So I want to share more thoughts about the 13 resiliency and the relations related with the lead 14 market here. 15 So from the market resiliency perspective, I 16 believe this is the right approach. The ATSS have 17 pioneered extended-hours trading for the past years 18 and have done a great job in leading the market from 19 marketing perspectives. That may have been sufficient 20 for the retail community until a major incident 21 occurs. So -- but across the APAC, local -- we need 22 to also think about local regulators are there. 23 So in the APAC, the retail community -- 24 retail community is not all that matters, but we also 25 need to think about the regulators in each country,	Page 133 1 statements around firms -- obviously no one's being 2 forced to do this, right, to get into this market. 3 Firms are going to make commercial decisions on this. 4 So based on, you know, the remarks, how do 5 you think market makers like Jane Street are going be 6 looking at this as far as the expectations? What are 7 you thinking? And what type of, like, a commitment 8 are you kind of expecting? 9 MS. CODY: Yes. I think it's hard to make 10 predictions about a developing session. And as a 11 liquidity provider, that isn't even really your role. 12 I think retail investors and global investors, as my 13 fellow panelists and panelists on the panel before 14 mentioned, they're really going to be the drivers of 15 demand. And as a liquidity provider, your role is to, 16 you know, meet that demand and to participate, as 17 we're doing today and in previous discussions, on 18 developing a resilient and positive session. 19 Broadly, as there's more competition amongst 20 venues, as we're doing some of these enhancements to 21 the infrastructure, like real-time clearing, ready 22 availability of market data, you know, those are 23 positive developments that might catalyze more demand. 24 But I think that being said, it's important 25 to remember that there is an overnight session

Page 134 1 already. We have experiences from that, and I think 2 that can drive a lot of the conversation. 3 As the SEC noted in the data release, which 4 I thought was really well put together, the overnight 5 session currently is thinner and has more concentrated 6 liquidity. It's got a different participant mix than 7 you might imagine. We'll be there once exchanges are 8 up. And there are different market dynamics. And 9 there's probably some expectation that those dynamics 10 will change as we have this infrastructure that we're 11 working on. 12 Realistically, liquidity available in the 13 overnight session will probably continue to be 14 different than what we see in the core and the pre- 15 and post-market sessions. And while the session is 16 still developing and new participants are entering, 17 you know, it seems likely that markets will be wider 18 and thinner. 19 And we'll, as an industry, monitor how that 20 develops, and that will catalyze people jumping into 21 the market or choosing to say, I'll wait until volume 22 develops to build infrastructure or provide an 23 offering to clients. 24 I think for a market maker, the biggest 25 thing is having a clear understanding of the rules and	Page 136 1 create-redeem facility in the overnight session is 2 going to be relatively limited. But I think that 3 takes us to ETFs just in general have a long history 4 of -- a battle-tested history of being fantastic price 5 discovery vehicles. And that's happened over 6 elections. It's happened during Brexit. It's 7 happened during COVID, wars. There's a long list of 8 events that have happened that investors are able to 9 express themselves through an ETF vehicle. That's not 10 going to change with the extended session. 11 And so we look upon the extended session as 12 being actually an extension of the functionality of an 13 ETF right now. And so we sort of think about it as 14 being, as I said, an extension. It's also very 15 supportive. It's not to say that every ETF is going 16 to trade the same way in extended session. They don't 17 trade the same way during the core session. A lot of 18 that depends on how the ETF is constructed, what the 19 underlying basket looks like. 20 So I think from an investor's point of view, 21 there's going to be some investor education that still 22 needs to continue. That happens throughout the 23 industry all the time. That's going to probably kick 24 up even more as the extended session comes on. But 25 those different structures in a thin market are going
Page 135 1 the expectations and then having confidence that the 2 infrastructure is there so that you can confidently 3 provide liquidity. 4 MR. TOES: Okay. Nat, coming over to you, 5 this is kind of like a three-part question. You 6 always get the extra one here. No. But listen, this 7 isn't the first time we've seen a scenario like this 8 where something new happens and it tends to be mostly 9 retail-focused. Like, even like the ETF market when 10 they first came out, there was mostly a retail 11 product. 12 So just generally, like -- and I know Hubert 13 kind of touched on this in the first panel, but if 14 there's something you can kind of add on this, just as 15 far as at what point does this -- how's the buy side 16 looking at this? 17 And then more particular, obviously, the ETF 18 markets have become extremely large. Is there 19 anything from an operational standpoint, create-redeem 20 or anything around that, that there's a unique 21 complexity with the overnight session? 22 MR. EVARTS: Thanks, Jim. I think I'm going 23 to take the second part first. 24 MR. TOES: Okay. 25 MR. EVARTS: I think as it stands now, the	Page 137 1 to get a little bit more amplified. 2 But I think as we talked about in the other 3 panel, I think that, you know, what's coming online 4 with the investor protection rules around limit up- 5 limit down, perfect? No. But it's thoughtful for the 6 industry to put that in place. 7 There are assumptions that we have made. 8 Dan did a fantastic job in his presentation with all 9 the data I've never seen. An industry is so excited 10 to have color be brought to all the numbers. But 11 those will be watched. The SIP will come online, so 12 there'll be more transparency. 13 And I think that from an institutional 14 perspective, that's sort of where most of -- now I'm 15 going back to your first question. From an 16 institutional perspective, that's what people are 17 interested in. They want to see what it's like. They 18 want to see what the volumes are. People have an idea 19 of what the spreads look like now, but those spreads 20 will differ from -- depending on what sort of vehicle 21 you're trading when you're in the marketplace. And it 22 can move from, you know, night to night. It can 23 shift. 24 I think generally speaking that even for -- 25 and it was brought up in our earlier panel just about

Page 138 1 the dichotomy between the type of names that trade in 2 the after-hours session. Yeah. You do have your 3 SanDisks and your Microns and so on and so forth. You 4 have your bigger ETFs. Then there is -- there's a 5 long left tail. 6 I don't -- I think one of the questions that 7 comes up are, do you think that you're going to see 8 growth in single stock versus ETFs? I'm not really 9 sure. I don't have the answer to that question, but I 10 feel like the extended session and the popularity of 11 ETFs, that we'll probably see it in the ETF space 12 slightly more being exercised, having people 13 experiment with it for those people that haven't spent 14 time or had the experience of being in the ATS 15 overnight session. And they want to sort of kick the 16 tires and see what it's like. And that's the best way 17 to experience what's going on or what could go on or 18 what it's like. 19 I think at the end of the day, the investors 20 are going to pass judgment about how they feel about 21 the success of this, and that's going to come out of 22 market quality. Were the spreads tighter? Were they 23 wider? Was the volume there? Was price discovery 24 there? That's really going to be the end sort of 25 arbiter.	Page 140 1 evolution and not necessarily a transformation. 2 MR. TOES: Okay. So we are time-wise -- 3 we're running not so good. We're running -- we should 4 be on Question 17 right around now. Just keep it. 5 But it's okay. 6 MR. EVARTS: Sorry. 7 MR. TOES: It's okay. It's all right. 8 Good. But because now, listen, we're going to dive 9 now more into some of the resiliency factors here. So 10 obviously, you know, there are -- we have -- there are 11 three key processes that are going to have to now be 12 constrained to taking place in this one-hour window 13 that we're going to have beginning December 6 here. 14 So I'm going to go a little bit out of order 15 on the three parts, obviously, around batch 16 processing, maintenance, and corporate actions here. 17 So I think I'd like to just start with the maintenance 18 part first, and then we'll come to batch and corporate 19 actions here. 20 So on the maintenance side, I mean, 21 obviously, systems, they need to be maintained. And 22 obviously, you know, when we talk about maintaining 23 systems, it could be putting in something new or just 24 general maintenance patches. But that obviously 25 involves testing around it as well.
Page 139 1 I think the other thing I would add, Jim, 2 is -- and it was brought up before and I'd like to 3 bring it up again -- is two things. One of which, a 4 statement was made about best execution, and I do 5 agree with Mr. Billings. And I know the rest of my 6 panelists agree, and obviously the SEC as well as 7 FINRA, that best execution is top of mind for 8 everyone. So that takes you to the point where you 9 say something else that was said, which was you don't 10 have to trade in the overnight hours. 11 Overnight hours might not necessarily be 12 where you should be trading. And that's a decision 13 that teams like mine and other asset managers, along 14 with other brokers, are going to have to communicate. 15 And they're going to have to share their experiences 16 and push back on the idea that we should trade this 17 over-hour or after-hours or in the overnight session. 18 But that's sort of a case-by-case basis. 19 That's going to be sort of a snowflake situation. You 20 know, each market is going to be different. Each ETF is 21 going to be different. Each single stock is going to be 22 different. It's going to be a different time. 23 So I think coming back to the ETF portion of 24 it, I think overall for ETF trading overnight or 25 overnight trading for ETFs, it's an incremental	Page 141 1 So since everyone's point, don't have -- 2 this is not a regulatory action. SEC is not forcing 3 us to go into 24-hour trading. You don't have to 4 trade the extended hours if you don't want to. But 5 maybe, Todd, if you could maybe just start with some 6 of, like, on the maintenance front, you know, do you 7 have any insights there? Like, what complexities are 8 you kind of seeing there on the maintenance side in 9 that one-hour window? 10 MR. LARD: Yeah. I think because we're 11 already trading 24/5 with the ATS model, and Chuck 12 alluded to this earlier too, in terms of when you're 13 doing multiple asset, there's a lot of stuff going on 14 in the industry, not just on the equity side. 15 You know, we're concentrated on the equities 16 in 23/5 here, but the 24/7 futures just came out. And 17 so now we have that as an offer. So you have to work 18 around not just -- and usually the resources are not 19 isolated to one asset class. There are multi-asset 20 class. 21 So as now, there's, you know, a new option 22 offering coming out. You're having to create these 23 windows, and I think it was very well said in terms of 24 the multiple, you know, cars, and now we're Indy -- 25 you know, doing the Indy pit crew here. That's what

Page 142 1 it feels like at this point in time. 2 You're having to find these windows. You're 3 having to break up your code into maybe some portion 4 goes into production, some doesn't go into production. 5 You're looking at different windows. Cycles are 6 going much quicker, but I think it's the entirety of 7 what's going on in the financial space, and not just 8 specifically to 23/5. 9 Because we're already in -- like I said, 10 we've already been operating in the 24/5, and we -- 11 you know, we had that weekend piece. So we're talking 12 23/5 here. Wait till we get to the 24/7, and then it 13 becomes even more problematic. I'm not so worried 14 about where we're at right now. It's that next phase 15 that I'm more worried about. 16 MR. TOES: Okay. Why don't we move up to 17 batch processing around that? You know, Dave, how are 18 you -- I mean, obviously, you've been -- where's 19 David? Oh, no, I'm sorry. I'm sorry. Brian. Sorry. 20 Sorry. You know, you've been doing it now for 3 21 months. I mean, you know, obviously, I am curious. 22 So, like, the risk around, like, end-of-day 23 processing, files sometimes coming corrupt, what's the 24 failsafe and what's the fallback on that? And what 25 are you seeing? And how are you kind of addressing	Page 144 1 that allow for a clearer to operate in the overnight 2 period. We've seen roughly about 25 percent of our 3 total membership population participating in the 4 overnight. So there's about 25 percent of clearers, 5 and we certainly expect that to increase, you know, as 6 we get closer to the December 6 period. 7 You know, or the last few months, since all 8 the ATSS have gone live, we took a very methodical 9 approach to allowing the ATSS to get to a point where 10 they've moved from this sort of batch-based 11 processing, right, where trades would aggregate and 12 effectively wait until the clearinghouse would open at 13 1:30 a.m. Now are submitting transactions on a real- 14 time basis since mid-July. 15 And so, you know, we look at the volume over 16 that period. It's a little over 15 billion that 17 occurs in clearing -- or that we see in clearing in 18 the overnight period, or over 200 million shares that 19 cleared over that period. 20 And so -- and again, that's materially 21 changed from, you know, if we look back at the data 22 year over year, but it's even changed since clearing 23 has gone to much more of a 24/5 cycle since June of 24 this year. So for us, it's not trying to fit a day's 25 worth of processing over the course of some defined
Page 143 1 should, you know, files start coming in corrupted? 2 MR. STEELE: Yeah. And, Jim, it's a great 3 question. So DTCC, for years, we've been at this in 4 terms of getting us to operating on a continuous 5 basis, a 24/5 clearing. In September 2024, we 6 expanded clearing hours from 4:00 a.m. up to 1:30 a.m. 7 The second phase of that journey for us was 8 earlier this year in June, where we expanded operating 9 hours in the clearinghouse to 24/5. Right? 8:00 p.m. 10 on Sunday night through 8:00 p.m. on Friday night. 11 And so that is continuous, and that allows the 12 clearinghouse to take in activity on a real-time basis 13 from the 3 ATSS that are submitting into us at the 14 point of execution. And that's frankly, you know, 15 what we have seen earlier this year. Now -- or since 16 the June period of earlier this year. 17 Now, to the points that were made earlier in 18 terms of, you know, this is an optional session, it's 19 not for everyone, we've made some risk management, key 20 risk-management changes to allow us to be able to 21 operate on a 24/5 basis. I think we made a conscious 22 decision, as an example, to not extend the existing 23 clearing arrangements that are in place during regular 24 hours. 25 And there are separate clearing arrangements	Page 145 1 period, 1 hour or defined periods in a day. 2 It's a continuous processing model that 3 allows the industry to operate most effectively in 4 this -- and what is effectively this 24-hour period. 5 ASSISTANT DIRECTOR NORTON: And just a 6 follow-up to that. To what extent do vendors play a 7 role in the batch processing? I know some of you 8 represent the vendor community. But you can only 9 extend your compliance, your operations to your firms. 10 Right? There's a certain amount of third-party 11 resiliency that you also have to plan for. 12 Curious if there are any thoughts on how you 13 control for vendor impacts in this? 14 MR. STEELE: So vendors, much like any one 15 of our participants, are going to be a key part of any 16 testing regime that we have as part of going live. 17 And so it's -- we want to take a very methodical and 18 measured approach towards implementation of new 19 clients or vendors going live. I think there are 20 certainly vendors, but frankly, or many clearers that 21 operate a good portion of the market. 22 And, you know, it's incredibly important for 23 us to be able to make sure that we're implementing the 24 right and facilitating the right testing with those 25 providers such that the -- when going live, it's --

Page 146 1 we're much more operating on a 24/5 basis or 23/5 2 basis, and not in the existing batch-processing model. 3 ASSISTANT DIRECTOR NORTON: Sure. So we've 4 all mentioned how some firms don't have to participate 5 overnight. Some exchanges don't have to participate. 6 When those exchanges aren't participating in the 7 night session, what do they need to do? Do they need 8 to zero out their quotes before the next session 9 starts? Or are there any considerations from the SIP, 10 for example, on the nonparticipating handoff to 11 participating firms? 12 MR. MACK: That was for me? 13 ASSISTANT DIRECTOR NORTON: Yeah. 14 MR. MACK: Yeah. The short answer is no. I 15 mean, take the new session out of it. At the end of 16 the day, 8:00 p.m. now, the session ends at the SIP, 17 and at 4:00 a.m. a new session starts up. And if you 18 haven't submitted anything into the SIP, you're not 19 going to have any quotes at the SIP or out to the 20 public. 21 And that exists -- that concept that you 22 raised of participants that will not be taking part of 23 the new session, that exists already today. We 24 operate 3 exchanges. We have competitors who have 25 even more exchanges than we do.	Page 148 1 away from it. And so when I think of, you know, 23/5 2 or any really new significant thing that's going to be 3 introduced into the market, it's really just another 4 piece of that puzzle. 5 You don't design your systems in a way where 6 you're not thinking about that. You're not just 7 designing it to be like, hey, want it to do this one 8 thing. You have to think about, okay, what are the 9 interdependencies? How am I going to maintain that 10 system? How do I do failover? How do I do software 11 updates? How do I do new product and new features? 12 So you design with that in mind. 13 So in one sense, this is just another thing 14 that you're pulling into that complex but well- 15 designed system across the entire industry. And I 16 credit to -- I'm not just taking credit for us, I 17 think credit for the entire industry on how far we've 18 come, at least during my career in the last two or 19 three decades, from where we were. 20 It wasn't always as clean and as smooth as 21 it is now, and we're in a really, really good position 22 based on what we've done over that time to absorb the 23 23/5 thing. 24 ASSISTANT DIRECTOR NORTON: So another win 25 on that technology piece is the development of these
Page 147 1 And not all the exchanges start up at the 2 same time now. So there's a few that start at 4:00 3 a.m., but there's several that start at other times. 4 Our other two do not start at 4:00 a.m. Only Nasdaq 5 does. 6 And so it's -- in the sense that you raised 7 it, we're not introducing a new dynamic really in that 8 sense. And so it's a -- the good news is it's a 9 tried-and-true exercise that we've already 10 experienced. 11 If I could, I want to make sort of a high- 12 level point relative to the previous two questions and 13 take a little bit of a step back and just think about 14 what this industry does from, like, an operating 15 systems perspective. 16 We all operate together and separately 17 multiple systems. You know, if you expand it across 18 the entire industry, I wouldn't even know how to count 19 how many there are, but even within firms there's many 20 interdependent systems, and you mentioned vendors, 21 it's relevant from that perspective as well. And so 22 there's some level of complexity there. 23 The good news is we've, over time, used 24 technology to solve all those problems in a really 25 good way and have almost abstracted that complexity	Page 149 1 frontier AI models. They're finding things quicker. 2 They're requiring almost continuous patching and 3 update cycles. 4 Maybe since Jim gave the disclaimer upfront, 5 does anyone have any thoughts on how that paradigm is 6 going to apply to the overnight session? What does it 7 mean for resiliency when the cyber threats are maybe 8 coming a little faster from different angles? 9 MR. MACK: I mean, I can take it -- make a 10 general statement around that. And just thinking 11 about cyber more generally. I think this is probably 12 true across the board. I know it's true for Nasdaq. 13 We operate a lot of systems, even just all the systems 14 we need to operate the exchange 16 hours a day. 15 We have things running all the time. We 16 have tons of systems that are running all night. And 17 so the fact that we'll have a couple more systems 18 running now eight hours longer, I don't think that has 19 a significant impact on the cyber policies and 20 standards that we set at our company. 21 You know, we have a very robust program. 22 I'm sure all of my colleagues up here and the folks in 23 the room do as well, that constantly evolves. There's 24 new technology emerges, like what you mentioned, and 25 we have to account for that. But I think of that as

Page 150 1 completely separate, really, from, you know, the new 2 session that we'll have from 9:00 p.m. to 4:00 a.m. 3 I'll leave it there. 4 MR. SOSNICK: To Chuck's point, I was going 5 to say something quite similar in the sense that this 6 is an ongoing issue for all facets of our business, 7 Patrick. So it's something that, you know, again, 8 without getting into specifics in a forum like this, 9 we're hypervigilant about this because we have 10 customers all over the world at all different times of 11 day. You know, the sun's always shining on one of our 12 markets somewhere, you know what to say. 13 So it's a holistic organizational type of 14 thing. I don't know that -- I'm not sure that for -- 15 yes, if you've never operated at night before, you 16 have new security challenges. If you've been 17 operating, call it, 16 hours a day or even eight hours 18 a day, but very robustly, you're already facing these 19 challenges. And I think it just -- it's one more 20 point of entry potentially, but it's part of a 21 holistic problem that everybody is hopefully dealing 22 with. 23 MR. ZUBA: Yeah. I'd echo that. I think 24 that you'd be hard-pressed to find a CISO who doesn't 25 think their job is already 24/7, and probably finds	Page 152 1 have some sensible features, like they're pretty wide. 2 They have two reference prices. They end at 4:00 3 a.m., but static bands in general pose some 4 challenges. They can protect you against errors or 5 extreme dislocations. 6 But if genuine news moves fair value outside 7 the band, especially if trading doesn't halt, it can 8 also leave investors trading at stale prices. 9 And there's no automatic pause contemplated 10 currently. So monitoring escalation, especially 11 during Phase 1, are very important. I think human 12 judgment and the ability for the listing exchange to 13 intervene and declare, if it's appropriate, is 14 important, especially as we're in this early phase. 15 I think in general any intervention should 16 be transparent, well communicated to the industry so 17 that people know what next steps are. 18 I think going forward, the plan to use 19 evidence from the session to develop future phases of 20 the price bands and future risk controls seems 21 sensible. 22 In general, I think this was mentioned on 23 the previous panel, we remain concerned about 24 extending overnight price bands to the pre- and post- 25 market sessions since there are typically periods of
Page 151 1 this whole conversation a little silly. They're the 2 group that's been prepared for this and has -- and 3 continues to be. 4 I think the threats may change a little bit 5 given some of the new innovations and things that 6 we're all excited to do outside of this, but I think 7 the lens of cybersecurity and those things I think is 8 just the same as it has been, which is 24/7 vigilance. 9 MR. TOES: Okay. Go ahead. 10 ASSISTANT DIRECTOR NORTON: Okay. So 11 turning to Diwa, I understand that Jane Street is 12 going to be in the extended session from Day 1. As a 13 market maker, do you have any concerns about the 14 guardrails for volatility? How are you looking at 15 correlated moves overnight in different asset classes? 16 Is there anything novel here from your perspective? 17 MS. CODY: Yeah. So on kind of like the two 18 questions, on the guardrails, I think, you know, this 19 was touched on a little bit in the previous panel. I 20 think the 20 percent initial price bands are pragmatic 21 and reflect industry compromise. But I think Day-1 22 design shouldn't limit how we adapt the framework as 23 we learn about the overnight experience and as we have 24 venues launch and participants change. 25 You know, I think the 20 percent price bands	Page 153 1 earnings announcements and other important market 2 announcements. You know, we wouldn't want to 3 constrain price discovery without strong evidence and 4 analysis. 5 I think Phase 2, you could consider things 6 like examining banded trading, halts, reopening 7 outcomes, and maybe consider something like sliding 8 bands. But I think for now the goal should be to have 9 a workable overnight session and then, you know, 10 continue to improve it with experience. 11 On your question on correlated moves, you 12 know, I think similar to managing risk in the core and 13 the pre- and post-market sessions, U.S. equities don't 14 trade in isolation. Price formation reflects 15 information from other markets, futures markets, 16 global events, and other things. And market 17 participants are already, you know, pretty experienced 18 in managing these risks. 19 You know, but again, as we enter a session 20 where new venues are coming online and new 21 infrastructure is coming online as well, just having a 22 clear sense of what the rules of the road are can help 23 firms respond to these type of events. 24 ASSISTANT DIRECTOR NORTON: Great. Thank 25 you for that. So curious about your thoughts on which

Page 154 1 aspects of regulation need clarity for this change in 2 the market. 3 Are there specific expectations for 4 regulators to respond in a certain way in the middle 5 of the night? Do you have a view on how the 6 regulators should be staffing to facilitate orderly 7 markets in the night session? Does anyone have a view 8 in particular on Regulation SCI and any changes that 9 may need to apply to that? 10 And I understand it's still going to apply 11 for the night session, but there are going to be 12 differences maybe in how we think about the staffing, 13 the escalation, and so on. 14 MR. LARD: I'll let Chuck answer SCI. But 15 as far as the other components, I do think, you know, 16 there's been a lot of tech specs. The CAT tech specs 17 came out. The TRF have come out. The SIP is out. 18 However, it's -- that's for the Day 1, December 6. 19 We need to be vigilant in terms of looking 20 to the future as, for example, CAT, if we get rid of 21 EBS and go to this request-reply system, we'll need to 22 understand if there's an event happening at that point 23 in time, how quickly do regulators want to get 24 responses from people? Is it more real-time? Or is 25 it, oh, we'll just get to that T+1.	Page 156 1 during these times. So sort of a conversation on that 2 and some guidance there I think is important. And 3 just as the industry has done a really good job 4 collaborating and coordinating, I think that from the 5 SEC as well would be very helpful. 6 And then just from, like, a procedural 7 perspective, the way we're thinking about, you know, 8 coverage is we have coverage around the key 9 operational aspects of running an exchange, like 10 surveillance department, the market operations 11 department, and so on and so forth across technology 12 and wherever. 13 But beyond that, it's just not those folks 14 that are responsible to do everything. There's, like, 15 a clear escalation tree, just like we have during the 16 day, because not everybody you escalate to happens to 17 be, you know, working on operating the exchange, for 18 example. So you have, like, a clear escalation 19 procedure tied to that. 20 And similarly, you know, we'd like to see 21 clarity around that from the regulator as well so we 22 understand what and when and how to escalate to the 23 regulators. And when we're talking about this, right, 24 we're talking about some pretty significant 25 situations. But it's much better to plan ahead than
Page 155 1 That may not be the case. I mean, you may 2 want to interact more quickly. So I think we have to 3 look at the future-proofing of -- you know, as Jim 4 said, we will get punched in the mouth at some point. 5 And that's when all these plans will go by the 6 wayside, and we have to figure out how we're going to 7 operate. 8 But I think whatever we can do to at least 9 set ourselves up to say, all right, as we're building 10 out this new system, request-reply or whatever it be, 11 even existing EBS, what are the expectations around 12 kind of the regulatory response needed from broker- 13 dealers or interacting when a situation pops up? 14 MR. MACK: Yeah. I mean, from our -- and 15 thank you for leaving Reg SCI to me, by the way. 16 MR. LARD: Yeah. 17 MR. MACK: I think from that perspective 18 it's very similar. I think it's a matter of having 19 aligned expectations. So a little bit of guidance 20 from the SEC and the regulators on what the 21 expectations will be, especially to the extent that 22 they could be different during these hours, which for 23 certain things may make sense. 24 You know, resolution timelines and stuff 25 like that may pragmatically make sense to be different	Page 157 1 to try and do that on the fly. So those are the type 2 of things we would think about and want to coordinate 3 on. 4 MR. ZUBA: Yeah. I think to echo Chuck, 5 it's the macro issues that I think the regulators 6 could really help us out with, and just ensuring that 7 the same processes and procedures that we follow today 8 to convene consensus and get people on -- and get 9 people on the same page all are available and can 10 happen 23/5 when the markets are running. 11 I think the self-reporting issues that we 12 have, I think people do a pretty good job of managing 13 their own internal problems and reporting those and 14 handling those properly and with respect to other 15 participants. 16 But when there is something that could 17 potentially be, you know, impacting us from external 18 places, who knows what the unknowns will be, but that 19 we have the support of the regulators to be able to 20 convene that group of people quickly. 21 ASSISTANT DIRECTOR NORTON: David, I'm just 22 curious if you have a view from the market data side. 23 Is there any clarity that you see that could be 24 helpful to the industry? 25 MR. TAYLOR: Part of our job is to bring

Page 158 1 consistency and clarity where it doesn't exist. 2 That's the value we deliver to our clients. But I 3 think from the regulatory point of view, we were 4 talking about this over lunch. Actually, was, you 5 know, is there an inflection point in the overnight 6 market's maturity that there we drive consistency 7 between limit up-limit down assignment during regular 8 trading hours versus overnight hours? 9 And, you know, just thinking about the 10 conversations we're in with our clients on a regular 11 basis, the more consistency we can drive, not just 12 that it fits the market dynamics, but it also makes 13 application development for the automated parts of the 14 trading stack more consistent, therefore easier to 15 test, therefore more stable. I think in the industry, 16 in the interest of stable markets and simplifying 17 where we can, as much as we can drive consistency, 18 that certainly helps. 19 MR. TOES: Okay. Great. So we're down to 20 our last 10 minutes, which is perfect. 21 This question is going to -- we're going to 22 ask everyone to answer it, all right? So I think when 23 we started the panel preps for this, I think the 24 concern obviously was around resiliency, making sure 25 that something doesn't break in the overnight that	Page 160 1 you know, increasing availability enhances resilience. 2 Overnight trading can give market participants the 3 flexibility to transfer risk when they want to rather 4 than letting that risk accumulate towards a specific 5 time in the market that things are open. 6 And that can facilitate price discovery. So 7 thinking about all the things that we've talked about 8 today, having an experience where you can more 9 flexibly transfer risk, I think, adds to the 10 resiliency of investor experiences. 11 MR. EVARTS: Do I really need to follow 12 that? 13 MR. TOES: No. I feel bad for Dave on the 14 end. 15 MR. EVARTS: Yeah. I agree with everything 16 Ms. Cody just said. I'm going to answer this a little 17 bit differently. I think that this exercise that 18 we're going through with the roundtables, with working 19 with the Commission, Chuck brought it up earlier, many 20 of the people on the panel have brought it up 21 earlier -- communicating, coming together, is actually 22 creating increased resiliency in our markets. 23 MS. JUNG: Based on the last session from -- 24 we just saw with Dan, we saw the data. Obviously, 25 foreign flow is quite dominant in the overnight
Page 159 1 then could spill into the next opening session here. 2 But I'd be curious just to go down the row 3 here as far as, is there things that are being done to 4 facilitate this overnight session that has a positive 5 for the regular session as far as, you know, building 6 out resiliency? Doing something quicker doesn't mean 7 it's being done sloppy, you know, to use the analogy 8 of the racing car, which is a great analogy. I'm 9 going to copyright -- take that. 10 But if we go down the row, I mean, as far as 11 things that you're going through now to facilitate the 12 overnight, is there a benefit to be had in building 13 that resiliency that has benefits for the overall 14 market and the regular session? 15 So we'll start with Diwa and go right down 16 the line. 17 MS. CODY: Great. I think as outlined by 18 Dan Mathisson in the data presentation earlier, you 19 know, this is a small but growing session. And the 20 way volumes develop going forward is going to largely 21 depend on, you know, willingness to participate from a 22 range of different investors. 23 And I think part of that is finding value in 24 this session and wanting to trade there. And I think 25 Director Selway said it well in his remarks as well,	Page 161 1 session. That means the APAC demand will definitely 2 provide ample liquidity to the U.S. capital market. 3 That means it helps the healthiness overall. 4 And also, the participation from the APAC 5 market can make more industry in the world overall. 6 That means the U.S. capital market used to be focused 7 on only locally in the U.S., but now there are more 8 U.S. equity professionals who have jobs in APAC 9 markets. In terms of sales or infrastructure or other 10 expertise, they can broaden the job markets too. 11 So participation from the APAC investors 12 will have better meanings. For example, there's a 13 positive way happening from South Korea. So recently, 14 Interactive Brokers and Samsung Securities have set up 15 the Korea-bound trading using -- the flow is from 16 Interactive Brokers, from the retail investors using 17 Interactive Brokers app, but through Samsung 18 Securities' omnibus account, they are investing in 19 South Korea. 20 So nowadays, the capital markets are more 21 complicated and in both ways. So we see the South 22 Korean capital market sees a similar good effect that 23 foreign from the U.S., foreign flow to the Korean 24 capital market can make it healthier. And on the 25 other hand, APAC flow can make it healthier here.

Page 162 1 So as long as we exchange more liquidities 2 back and forth, we can make a better everything in the 3 world and in this capital markets overall. 4 MR. LARD: I think it's a little bit of the 5 opposite side of the coin on your maintenance question 6 earlier. It has forced us to have innovation, and 7 Chuck alluded to this earlier. You know, when we went 8 from T+5 to 3 to 2 to 1, at each time you were 9 building out your infrastructure to be able to be more 10 real-time. And I think there's been a lot of 11 innovation. Brian will probably touch on this. 12 I mean, what they're doing, I think that's 13 the biggest key outside -- I would, you know, go back 14 to the collaboration. The collaboration has been 15 fantastic. So I think that this is a blueprint for 16 how things should be done. And, you know, I will just 17 lean on my exchange partners in the crowd here and 18 say, can we also do this for how we're doing the 19 rollout for options? 20 MR. MACK: Yeah. Agree with everything 21 that's been said so far. And just two quick things 22 from my perspective. 23 On the one side, kind of ties back to what 24 Jiyoung said is there's going to be more investment in 25 U.S. equities companies. Like, that's a very positive	Page 164 1 be able to do right now that you're like, oh, yeah, we 2 need to do that too. So I think you even uncover 3 future opportunities to continue to improve. 4 MR. SOSNICK: I'm going to take a little bit 5 different tack on resilience. And in some ways, also 6 follows through with what Jiyoung said, and thank you 7 for the shout-out, Jiyoung. But if our customers -- 8 as the world's getting more interconnected, I think a 9 lot of the resiliency comes from educating the 10 customers. 11 You know, we've done a lot, let's say, 12 educate our customers, you could buy SK Hynix in Korea 13 much more cheaply than you could buy the ADRs here. 14 And it's also understanding that it's not the same. 15 And I think of an anecdote where I was at a 16 derivatives conference in Canada several years ago, 17 and one of the top derivative salesmen, whose name nor 18 firm I will mention -- you'll understand why -- came 19 up to me and he said, I'm the only -- I think I'm the 20 only guy on my desk who doesn't have an Interactive 21 Brokers account. 22 And that stunned me because it was a firm 23 that does a lot of retail business. I said, why? And 24 he said, because you guys are the one place I can 25 trade futures overnight. And I said, well, why don't
Page 163 1 thing for the U.S. equities market. So that's one 2 that makes it more resilient. 3 Two, whenever you have you're going to make 4 a change, it is at the very least an opportunity to 5 rethink how you do things. In some cases, it's also a 6 forcing function. Either way, usually you come out of 7 it much stronger and more resilient than you went into 8 it. 9 I'm going to give a very simple example. On 10 corporate actions, we didn't end up talking about that 11 on this panel, but it was discussed in our previous 12 panel. I think we vastly improved a lot of processes 13 around corporate actions compared to where we were. 14 And it's not like we weren't working on that 15 constantly, at least we were as a listing exchange, 16 but this forcing function actually drove us to do a 17 lot more, I think, than we would have all at once. 18 It also drove some good coordination with my 19 buddies downtown in New York to get a little bit more 20 standardized across exchanges as far as how we handle 21 corporate actions. And I think both of those things 22 are very big positives for the industry and for 23 ourselves. So, like, that is definitely going to make 24 us more resilient. 25 And also you uncover things that you may not	Page 165 1 you do it? And he said, I live alone. I like to 2 drink. I like to gamble. I'm very afraid that I'll 3 fat-finger a trade, forget to put in a stop, and wind 4 up broke. And that's, of course, an exaggeration. 5 But I think if we -- if the customers go in 6 knowing what the benefits and limitations are of 7 trading in thin markets overnight, I think it will 8 ultimately make for a more resilient marketplace 9 because I think if you have good customer experience 10 with solid -- with the correct expectations, that will 11 make it a better experience for all, and a more 12 resilient experience for all. 13 MR. STEELE: I mean, I agree with what 14 everyone has said. And I think to build on what Todd 15 and Chuck were saying, I think, you know, when we 16 exhibited this, we saw this happen as a function of 17 moving the settlement cycle in the U.S. equities 18 market from T+2 to T+1. 19 You had to make an investment. You had to 20 automate your systems. You had to think about 21 processes that you needed to change that no longer 22 could live on a multi-hour time frame. And I think 23 you're going to see this in executing in the overnight 24 market. You will see firms have to make decisions. 25 They have to make investments that probably on an

Page 166 1 otherwise basis they wouldn't make because it's not 2 the right ROI. It doesn't have to carry the right 3 sort of budgeting, resourcing. But I think this is 4 the impetus for them to make the investment. And I 5 think in and of itself that will carry real 6 resiliency. 7 And again, we've seen that in action. 8 Right? The automation that firms have deployed that 9 has provided real levels of resiliency to the system 10 as a function of moving to the settlement cycle, I 11 think this is the next step. 12 MR. TAYLOR: From the infrastructure point 13 of view, I would just say that it's going to bring 14 more discipline to the change management and 15 automation, to dovetail on Brian's comments. 16 I mean, for us, we execute 10,000 changes a 17 year across our platform. That averages 200 a week. 18 We were forced to highly automate that. And that's 19 largely because of the, you know, hundreds of markets 20 we cover and then a lot of the private infrastructure 21 we run for a lot of the global players. 22 But even in that environment, in the U.S. 23 equity markets, you know, some of the changes we 24 execute in tandem with our partners still take longer 25 than a 60-minute maintenance window.	Page 168 1 we know we're going to learn from each step, and I'm 2 also really excited to hear them solve 24/7 in the 3 next panel. 4 MR. TOES: Okay. Well, thank you. One 5 minute over. That's perfect. Thank you. Thank you 6 all. All right. 7 DIRECTOR SELWAY: Excellent panel, 8 everybody. Thank you, moderators. So we're going to 9 take a short break, and let's please be back here at 10 2:45. 11 (Whereupon, a short recess was taken.) 12 PANEL THREE: EXPECTED IMPACTS AND CONSIDERATION 13 OF NEXT STEPS 14 DIRECTOR SELWAY: All righty. So let's get 15 moving with our third and final panel of the day. The 16 third panel is on expectations and maybe future events 17 associated with 24-hour trading starting soon. It 18 will be moderated by my colleague Peggy Sullivan and 19 Adrian Griffiths from MEMX. So over to you both. 20 MS. SULLIVAN: Okay. Great. Thank you. 21 Just before, there's a quote just outside of the 22 auditorium, and it says, "I want to become better 23 equipped to see over the hills and around the corners 24 of problems that may be looming in the balance -- or 25 in the distance, rather." And that's by William H.
Page 167 1 So there's forced investment where we have 2 to go even improve upon the automation engineering 3 that's already in place. And it's then going to force 4 more investment in redundant infrastructure for folks 5 who I think have been dragging their feet, perhaps for 6 commercial reasons, on fully building out enough 7 redundant infrastructure and, you know, having 8 creative solutions to do that efficiently, whether 9 that's with underlying tech or on-demand provision in 10 the cloud. 11 You know, I think there are technology 12 solutions that are available to the industry, but they 13 do have to commit to make the investment both in the 14 infrastructure and then the engineering of the 15 automation around it. 16 MR. ZUBA: Yeah. All of that, I guess. You 17 know, I think one of the interesting and, I think, 18 heartening things is that I think we didn't let 19 perfection get in the way of this. I think everyone 20 here has talked about how this is an iterative 21 process. This is a good first step. 22 I think Adrian's really happy that he's a 23 moderator and no one can ask him questions in the next 24 panel about how he got to the LULD methodology, but I 25 think that we know that we're going to keep growing,	Page 169 1 Donaldson. And it just reminded me of the reason that 2 Director Selway is so interested in having this panel 3 and wanted to thank all of you panelists for joining 4 us. 5 I'm also going to steal from Commissioner 6 Peirce and say I don't think anyone in the audience is 7 going to fall asleep during this panel. We have an 8 extremely lively group here. 9 So what I'd like to do is introduce the 10 concept for the panel. The panel is a Day 2 concept. 11 What will come next with regards to liquidity and 12 capital formation as trading extends into this next 13 session? So I'd like to invite each of the panelists 14 to briefly introduce themselves, and then I'd like to 15 turn it over to my co-moderator, Adrian Griffiths. 16 MR. COULSON: I'm Cromwell Coulson, COO of 17 OTC Markets Group, and we operate for OTC Securities, 18 OTC Link ATS, and our -- and the Moon ATS trading NMS 19 securities overnight. I'll thank everyone to keep it 20 very short so we can talk about substantive stuff. 21 MR. GALINOV: Dmitri Galinov. I'm CEO of 22 24X Exchange. 24X National Exchange was the first 23 exchange that applied to the SEC for the license to 24 get approval to trade overnight, and it was granted. 25 Thank you so much. We're very excited to start

Page 170 1 trading overnight on December 6. 2 Outside of the stocks, 24 Exchange also is 3 one of the main platforms for emerging market foreign 4 exchange. So we are not a novice player in overnight. 5 We already trade 24 hours a day, as well as operate 6 crypto exchange that's also certainly operating 7 continuously. 8 MR. GEYER: Invesco thanks the Commission 9 for this opportunity to participate. We are a \$2.5 10 trillion asset manager that invests across active, 11 passive, and private portfolios. My name is Will 12 Geyer, and I head up our Capital Markets division. 13 MR. HARRINGTON: Hi, everyone. My name is 14 Mike Harrington. I head up client relationships for 15 Citadel Execution Services, which is a division of 16 Citadel Securities. We provide routing and execution 17 services to broker-dealer clients around the world, 18 handle approximately 35 percent of all the retail 19 volume executing in the United States today. 20 We have been involved in extended-hours 21 trading for more than a decade and launched an 22 overnight offering in November of last year. 23 Appreciate the Commission for providing the 24 forum here for an important topic, and I look forward 25 to the discussion.	Page 172 1 structure initiatives. 2 So likewise, thank you so much for the 3 invitation to join. 4 MR. O'SULLIVAN: Hi. Thank you very much 5 for having me here. My name is Ryan O'Sullivan, 6 Managing Director at BNP Paribas. Thank you to the 7 Commission. Thank you to the Division. For those who 8 might not know, BNP Paribas is the leader in European 9 financial services and banking. We're present in 64 10 countries and we employ more than 180,000 people. 11 A fun fact that I didn't know before getting 12 prepped for the panel by other teams that I thank 13 also. We've been active in the United States for over 14 150 years. So we're happy to be present to present 15 hopefully a helpful perspective on the developments in 16 U.S. equity markets. I am the co-head of U.S. Cash 17 Equities. I'm also the Global Head of Trading for 18 Cash Equities, as well as the Global Head of the 19 Platform for Cash Equities. 20 MR. QUAST: Hi there. I'm Tim Quast, 21 Founder and CEO of ModernIR. And the reason I'm here 22 is apparently there was no voice from the issuer 23 community. So I got a call from Jamie Selway, and he 24 said, so apparently, we've nominated you to represent 25 issuers in this confab. And I said, well, I've got
Page 171 1 MS. HASSAN: Good afternoon. I'm Naureen 2 Hassan. I'm the CEO of DriveWealth. We're a B2B 3 infrastructure company that allows firms around the 4 world to offer self-directed trading to their retail 5 clients. Thank you for the invitation to be here. We 6 have offered overnight trading, reoffered it starting 7 in November of last year, and happy to share the 8 experiences. 9 MR. HYNDMAN: I'd like to thank the 10 commissioners for the opportunity to speak today. My 11 name is Brian Hyndman, the CEO of Blue Ocean 12 Technologies. We run the overnight alternative 13 trading system called BOATS. We operate from 8:00 14 p.m. to 4:00 a.m. Eastern Time. 15 MR. MASONE: Hi there. My name is Mike 16 Masone. I am Head of Market Structure for Citigroup 17 Global Markets, Inc. That's the U.S. broker-dealer 18 arm of Citi. We also operate broker-dealers in London 19 and in Asia as well. 20 Obviously, as one of the largest global 21 firms, we are quite interested in the developments in 22 the space. I myself am a 20-year veteran of Citi, 23 started in our legal department covering the equities 24 business. And now in a cross-asset role, help 25 strategize around a number of regulatory and market	Page 173 1 bad news and good news, and you know, which do you 2 want first? He said, give me the bad news. And I 3 said, well, I'm not very bright. He said, is there 4 good news? And I said, well, I'm not shy. And he 5 said, that'll work. 6 So my firm is a quantitative data analytics 7 firm and for -- in fact, the CEO of my professional 8 association is sitting here. I'm a 30-plus-year 9 member of NIRI, which is the National Investor 10 Relations Institute, and in that profession, my firm 11 is known as the market structure experts. 12 And we're a quantitative data analytics firm 13 that builds software and mathematical models and 14 algorithms to measure market behavior from all of 15 these people with whom I'm on the panel and the two 16 panels that we've seen earlier today. And our job is 17 to help public companies understand the addressable 18 market. How do you attract flows? How do you control 19 the controllables? And so we have an interesting 20 perspective. 21 And I credit Matt for making this point, and 22 that is that everyone else has a choice. You know, 23 all the participants on this panel, all the panels, 24 everybody else in this room has a choice about 23/5 25 trading. We do not. Our product gets traded whether

Page 174 1 we want it to be traded or not. So we have some 2 interesting thoughts on how this can work well for 3 everybody. 4 And Peggy and Adrian, thanks for moderating. 5 Good to be here. 6 MR. GRIFFITHS: Well, thank you all for 7 joining us. Really excited for the panel today. You 8 know, we followed two really great panels. You know, 9 I think key takeaways, I think we've heard the green 10 light, you know, from the venues, from the 11 infrastructure, everybody's ready for December 6. So 12 we have the pleasure of talking about what comes next. 13 So I'd like to start, Dmitri, with you. You 14 really started the conversation that we're having 15 today about, you know, 24-hour trading on exchange. 16 Right? So today, you know, ATSs account for, you 17 know, about -- overnight ATSs account for 1 percent of 18 volume. 19 What are the trends that you expect? Do you 20 expect to see growth in volumes? Do you expect to see 21 market quality changes as exchanges enter this market? 22 Can you tell us a little bit about why you wanted to 23 join this overnight market? 24 MR. GALINOV: Thank you. And we're 25 certainly very excited about the growth of the volume	Page 176 1 So once exchange is going to be there, you 2 will have those countries come in and trade that they 3 don't do right now. And they trade it in their 4 preferred time. And then what happens is somebody 5 from South Korea can trade somebody in Japan, somebody 6 in Taiwan. It creates massive liquidity on its own 7 even without the involvement of the U.S. So massive 8 data distribution is coming with the SIP. More 9 countries are coming. 10 We certainly -- and the trend is -- start 11 over? I think I'm loud enough. So -- but the trend 12 is certainly continuing to grow, and I think it's 13 going to grow exponentially. 14 MR. GRIFFITHS: Great. Okay. So Cromwell, 15 I want to turn to you next as, you know, current ATS 16 trading in this session. I think we heard from some 17 of the prior panels this idea of competition brings 18 resilience. It brings, to Dmitri's point, more 19 eyeballs on the market data. 20 So how are you thinking about this as an ATS 21 that already trades overnight? You know, do we expect 22 to see increases in market quality as exchanges enter 23 this area? How are you thinking about this? 24 MR. COULSON: So we entered the space 25 because our broker-dealer subscribers said they wanted
Page 175 1 in the area. Earlier in the day, Dan presented the 2 figures. I mean, the overnight market is growing 3 three- to fourfold year over year, which is 4 impressive. But it's going to be more impressive when 5 the SIP is going to start operating on December 6. 6 Just think about, you know, the consumers. 7 Start with the consumers of market data. You know, 8 Blue Ocean or, you know, OTC Markets, they have 9 probably a couple of hundred consumers of market data 10 that, you know, firms that trade in the data. Compare 11 that to the SIP. SIP has 5,000,000 subscribers. It 12 has 300,000 professional subscribers. 13 That's the -- it has 400 systems that use 14 SIP data without even displaying. So just think about 15 the amount of distribution of market data is going to 16 happen on December 6. It's going to be everywhere. 17 So I think that's one piece that makes us very hopeful 18 to see the increased volume. 19 The second is there are certain countries 20 outside in Asia, and this is really -- overnight is 21 really driven by Asia. They are hesitant to trade on 22 ATSs because they're not -- you know, in their eyes, 23 they want to see more regulation. They want to see 24 more, you know, like Reg SCI, more resiliency that 25 comes from an exchange.	Page 177 1 alternatives, and not only for the business side, but 2 also to give their clients more confidence in the 3 market. 4 And we also did it because we wanted to 5 learn how to run our systems overnight and eventually 6 24/7 because that's where markets are going. And, you 7 know, I've always said about the industry, we're a 8 pretty lucky industry. We're like Germany 9 shopkeepers. I mean, we haven't had to work weekends. 10 We show -- we don't even put in Dolly Parton hours of 11 9:00 to 5:00, and for, you know, keeping our stores 12 open. 13 And -- but if you go in -- and I have to 14 thank Dan Mathisson, his presentation with a moon logo 15 at the top was really good. You know, I think it's 16 going to help our market share. He also brought up 17 the fact that NMS listing standards include a lot of 18 penny stocks. We look at activity based on notional 19 volume and transaction counts. We don't use share 20 volume because it gets skewed. 21 I'd also say, go to the shopkeeper analogy 22 because I think it's really good if we're trying to 23 predict the future. There's a lot of research when 24 Europe and other places have expanded store opening 25 hours, both during the day and on weekends.

Page 178 1 And, you know, one other point I looked up 2 for overnight convenience stores, what are the most 3 popular items? Tobacco, beer, and energy drinks. So 4 it's not surprising we're seeing stocks with 5 volatility and highly leveraged ETFs. 6 That's -- the people want to own assets. 7 There's a lot of great names. We're also selling milk 8 and vegetables and fruit. And, you know, we're 9 selling great stocks because the world is wanting to 10 come here. 11 When you look at the academic research, it 12 shows clearly that extended hours increase turnover, 13 they increase productivity, and they increase 14 employment. Good for the industry across the board. 15 But sadly, just extended hours was, 16 according to Claude -- and there's other researchers 17 who can do advanced work than I can -- was only 1 18 percent to 2.5 percent. So that's not the only story. 19 So the story is we're having to expand the 20 use -- is for the use -- for the usefulness and 21 utility for investors. Because we also have an idea, 22 is by opening up, we're going to bring in a whole new 23 group of investors. And there's a lot of research 24 about bricks-and-mortar stores versus going online. 25 And that's going to bring in the world's global	Page 180 1 Brian, I want to bring you into this. So Blue Ocean 2 really started this overnight session. So I want to 3 hear from you about, you know, where you see this 4 going and really how exchanges and ATSS can work 5 together to create a good market for investors? 6 MR. HYNDMAN: Sure. Sure. So to use the 7 baseball metaphor, we're in the first inning. Right? 8 I've been saying that for the past five years. So 9 it's a pretty long inning that we've been in. But I 10 do think as the exchanges get into the game on 12/6, 11 we're now going to go into the second inning. Right? 12 And as you look at the stats that Dan put 13 up, there's a lot of retail flow in there. Retail's 14 on 40 percent or 50 percent of, you know, each side of 15 the trade. So going forward, that's going to change 16 dramatically. 17 When I look at the brand -- and I worked at 18 Nasdaq for many years, and I look at their brand, it's 19 stronger outside the United States than it is inside 20 the United States. So Nasdaq and the New York have 21 tremendous brands. That alone is going to help 22 recognize and bring brand awareness to the overnight 23 market. That doesn't mean that they're going to get 24 all the order flow. It's just going to bring brand 25 awareness to trading U.S. stocks.
Page 179 1 investors. And the world's global investors are going 2 to come in a lot because they like to own U.S. assets. 3 They're also going to come in for the 4 entertainment. They want the action, the utility. 5 And that's a good thing. You know, we'll hear 6 companies are generally nervous. They want only an 7 investor to show up and, I want to buy my stock 8 quietly, and they own it and they love it, and then 9 maybe they go to Omaha once a year to the annual 10 meeting. But you need liquidity. Nobody who owns a 11 stock wants to spend every day repricing it every day. 12 That's what the speculators do. That's what 13 the dealers do. That's what the market does. So 14 building that market quality is we are going to make 15 bigger, deeper, expanded markets, and that's where our 16 excitement is. Now, of course, it's a smaller group 17 of securities. 18 We eventually believe it's going to cover 19 the whole market, which is going to come down to the 20 OTC market, which is really our focus, and that will 21 improve that market quality and not just for the Roche 22 ADRs, but bringing more capital into the U.S., and 23 having the United States remain the financial 24 supermarket of the world. 25 MR. GRIFFITHS: Great. Thank you. So	Page 181 1 So I think that's a good thing. I think 2 exchanges and ATSS coexist today. Nasdaq and the New 3 York and the exchanges don't have all the volume out 4 there. It's split up between exchanges, ATSS and 5 internalizers, and that's what the overnight is going 6 to look like. 7 But, you know, going forward, how can we 8 work together? It's certainly we need to focus on the 9 fragmentation. Right? So the market is really 10 fragmented as it is during the day and we need to make 11 it look seamless for the end customer. So when 12 they're out there buying and selling, it's seamless, 13 it's harmonized, we all have the same rules. We're 14 not competing on a 25 percent price band and a 20 15 percent price band. So it's seamless, it's 16 harmonized, and I think from a surveillance 17 standpoint, we have to do a very, very good job there. 18 Now we have a lot of retail customers around 19 the globe that are trading on the platform, and we 20 take our surveillance seriously at Blue Ocean and I 21 know all the other venues do too. Whatever we can do 22 to collaborate with a broker-dealer customers and 23 collaborate with other ATSS and exchanges, think we'd 24 go a long way to build up the robustness of the 25 overnight space.

Page 182 1 MR. GRIFFITHS: Great. Thank you. So 2 Naureen, I want to turn to you next. So as Brian 3 mentioned and as, you know, we saw in Dan's 4 presentation earlier, right now the overnight session 5 is really a retail market. 6 And I want to understand from where is this 7 volume coming from? Think we've heard a lot of it is 8 foreign retail but can you give us your perspective on 9 volumes and where that's coming from? 10 MS. HASSAN: Yeah. I want to start and go 11 back a little bit on the perspective of what's driving 12 this international retail interest in U.S. equities, 13 and I think it anchors back to fractional share 14 trading. Because fractional share trading enables 15 Jiyoung's mother-in-law to buy just a little bit on 16 her phone of SpaceX or Nvidia where a whole share 17 would be out of their reach. 18 So that one change, I think really changed 19 the dynamic and allowed international investors to 20 invest in the most innovative and deep capital market 21 in the world, which is here. 22 Now, then what are we seeing? So the 23 Treasury Department data over the last three years, 24 the growth of foreign ownership in U.S. equities has 25 grown 76 percent. And so that is I think what's	Page 184 1 we're just at the beginning of this as Brian said, we 2 have clients queuing up to turn on 24/5 trading in 3 Australia, New Zealand, even in Europe because again 4 with the time difference, we're seeing demand around 5 the world for this. 6 MR. HYNDMAN: I just wanted to add one stat 7 there. You know, we distribute our data on Bloomberg, 8 and when I get the stats every month, I look at them 9 and comb through it and close to 150 buy-side shops 10 are now buying the data on the Bloomberg terminal. It 11 tells me that the interest is there. And as the 12 exchanges and as the SIP comes in, we're going to 13 shift from retail to starting to see that 14 institutional business grow over time. 15 MR. GRIFFITHS: Great. Thank you for that. 16 So I want to turn to the other side of this. So 17 obviously, we talked a little bit about access. So 18 who's trying to seek liquidity in this market? And 19 let's talk a little bit about liquidity provisions. 20 So, Mike Harrington, you mentioned you 21 started trading in this market November. Can you just 22 tell us a little bit about how you expect liquidity to 23 evolve in the overnight session? And what sort of 24 metrics, stats you've been focusing on from that 25 perspective?
Page 183 1 inherently behind this growth of overnight that you've 2 seen is people just wanting to trade in their own 3 daylight hours. 4 Now, in partnership with Brian and with 5 Bruce and Moon, we launched overnight again in 6 November and what we have seen, so just in terms of 7 numbers -- now, I'm not sure we're either 32 percent 8 or 16 percent of Dan's share volume. I can't tell, 9 depends on I was trying to do the back of the envelope 10 math, 16 percent of our volume of their volume and 11 it's that means it's 10 percent of our flow is now in 12 the overnight market. 13 That 10 percent of flow, 40 percent came 14 from pre-market, but 60 percent was new interest in 15 trading. So this isn't just about reallocating the 16 pie between sessions, it is people who otherwise 17 wouldn't trade. 18 Other things I would add is I know there was 19 a lot of concern around liquidity in this overnight 20 session, but what we have seen is the median overnight 21 spread for non-penny stocks is 4x tighter than it is 22 in the pre-market session. So I think the fact that 23 this concern that overnight would be worse is showing 24 up at least in the data that we see. 25 And one more thing I would add, I think	Page 185 1 MR. HARRINGTON: Yeah. Thanks, Adrian. So 2 I thought Chairman Atkins' remark at the beginning was 3 right on point, which was not whether trading is going 4 to happen in a 24-hour market, but where it's going to 5 happen. And so our focus is on making sure that, 6 that's here in the U.S. 7 And I think the good news to report is not 8 only are the volume strong, but the market quality is 9 actually quite good. 10 So kudos to Dan and Keegan on the excellent 11 report. They put out really interesting stuff. I 12 apologize, I don't have any graphics from NASA or the 13 Department of Agriculture to layer onto these stats, 14 but wanted to build on some of those stats with some 15 market quality. 16 So first overnight spreads, what we see is 17 spreads about two to three times what you see in the 18 regular market session. So what does that mean? I 19 looked at above it, this is all data from orders 20 coming through Citadel Securities by the way. So that 21 represents more than 50 percent of the market. So I 22 think it's a pretty good representation of what the 23 broader market looks like. 24 Looking at just stocks above a dollar 25 because of the heavy influence of sub-dollar that can

Page 186 1 skew some of the stats, you also have to do some data 2 synchronization here to make sure that the NBBO that 3 you're calibrating off of is the same as what we all 4 use during regular market hours. So round-lot NBBOs. 5 All stocks above \$1, we see around a \$0.09 spread 6 versus \$0.04 in regular market hours. 7 If you drill down into the S&P 500, \$0.38 8 versus 12. So again, approximately three times. 9 ETFs, \$0.05 versus about 2.25. So that's very 10 comparable to what you see in pre- and post-market. 11 It's actually a little bit tighter than pre-market, 12 but as noted pre-market has lot of news announcements 13 and earnings and other things. So, but post-market is 14 actually tighter. 15 Depth of book, so this was surprising. The 16 depth of the market that we see in the overnight is 17 deeper than both the pre or early or the post. So we 18 use the median, because averages can get skewed, but 19 the median is \$15,000 of liquidity on the side of the 20 market that the customer is trading against. The 21 median order size is around \$800. 22 So what that tells you is there's plenty of 23 liquidity to satisfy the average retail order. 24 Average stock price \$21 in the overnight versus 33 Reg 25 session. As noted, because the order types are	Page 188 1 things moving and thank you, I think that that's going 2 to help us move into the next section, which is going 3 to be retail and institutional participation. 4 So I'm going to call on Will Geyer, and then 5 I'm going to follow it up just I'm letting you guys 6 know ahead of time, Ryan and Mike. 7 So as you stated, Mike, that Keegan and Dan 8 have pretty much level set that the demand for 9 extended trading hours comes from retail investors. 10 So what we'd like to hear is from the institutional 11 side, you know, what's your approach? What are you 12 thinking? 13 And then, you know, if you could let us know 14 how you're preparing for the 24-hour market. So we'll 15 go Will, Ryan, and then Mike. 16 MR. GEYER: Yeah. Thanks. I think it'd be 17 helpful to share some details on our workflows, which 18 could provide the context for institutional adoption 19 today and where it might go. 20 If you think about a traditional 21 institution, there's two kinds of activities. There's 22 cash moving in and out of our funds, and then there's 23 reconstitution activity. And then we would break that 24 down into two cohorts. We have active funds and we 25 have passive funds.
Page 187 1 restricted to limit orders only, what you do see is, 2 behaviorally, about two-thirds of the orders that 3 execute come in non-marketable. That compares to 4 about one-quarter, or 25 percent, in regular session 5 that comes in non-marketable. 6 And just to finish, I think Dan had noted 7 that you see a sharp volume decline in the last 10 8 minutes of the trading day. So we see that that is 9 due in large part to clients preparing for the 10 transition between the overnight and the 4:00 a.m. 11 session. So they will pull orders back and restrict 12 order entry in that last 10 minutes as they prepare 13 for a bunch of coming back from the market and then 14 having to reship those orders into the primary markets 15 when they wake up at 4:00. 16 So I think that's a really big opportunity 17 here is to smooth out that volume. And you see 18 spreads blow out during that time period because the 19 orders don't come in all at one time. Right? They 20 sequentially route out through different market makers 21 or through different wholesalers and it takes some 22 time for the book to fill in. 23 So we hope that with the exchanges coming in 24 that could smooth out. 25 MS. SULLIVAN: Okay. In order to keep	Page 189 1 If we were just to look at the passive funds 2 themselves and think about why or why not they're 3 trading their reconstitution activity in the primary 4 markets because they're benchmarked to the close. And 5 I don't see any future pathway unless they change the 6 strike dates for the passive indices themselves where 7 that would deviate. So liquidity is concentrated on 8 the primary close. I think it stays there. 9 Now, if you were to look at the active 10 strategies and the demographics of our flow, 90 11 percent of our orders, we're talking millions of 12 shares, about 65 percent of our order flows in the 13 U.S., falls into low liquidity demanding order types. 14 So think of these as small trades. These are, again, 15 cash flows, dividends that can be executed pretty 16 efficiently in the marketplace. That represents about 17 60 percent of the notional that we trade. 18 Ten percent of the trade are high-impact 19 trades that take multiple days to trade. They're 20 usually portfolio, thesis, reconstitution, event 21 activities, and that's about 40 percent of what we do. 22 So if you were to look at the workflows 23 around cash flows coming into our funds and corporate 24 actions, I don't think there's really a way in today's 25 TradFi rails to pull that forward into the overnight

Page 190 1 session. Those processes run after the market closes. 2 They take hours. We've to go through our custodian 3 TA and all of our different enterprise processes. And 4 so they kind of show up in the beginning of the next 5 day. 6 And then on the bigger activities, you know, 7 that we have, we do see that there's opportunity for 8 more institutional engagement, but it's pretty 9 idiosyncratic. It's concentrated around news events, 10 and we do think that there as more and more volume 11 kind of develops around that, let's say the cohort 12 expands beyond the Mag. Seven, we could have traders 13 engage that more opportunistically. 14 So that's where we think we will be playing 15 is just sort of in that high-impact trade situation 16 where there's liquidity, where there's opportunity. 17 If we were to think out into the future at 18 where this all might evolve around the orchestration 19 of workflows, if everything goes on chain, and we were 20 to achieve the wildest aspirations of that technology, 21 then we could see the atomization of cash flows into 22 funds, of corporate actions taking place 23 instantaneously, which could pull it forward into the 24 overnight session. And for those low-liquidity- 25 demanding trades, if we saw breadth and depth continue	Page 192 1 markets are efficient, if alpha was -- if there wasn't 2 alpha present, many active managers would be out of 3 jobs. 4 So we're here to build products that service 5 these customers. Now, what does that mean? We had to 6 create change across something like 85 applications in 7 both our financing apparatus as well as our execution 8 apparatus to be able to adapt to the fact that the 9 market was making this change. We're short to the 10 change. 11 Whether or not we wanted to make the change, 12 we have to. By contractual commitment, I have to be 13 able to provide execution services on exchanges here 14 in the United States no matter when they are open. So 15 therefore we do. 16 But, you know, my personal approach is now 17 we have to provide the best product possible for 18 clients that wish to transact. If many -- and so this 19 runs gamut again from clients that have said, I don't 20 have any interest at all. Two, people that are 21 actually actively setting up desks to take risk based 22 in Hong Kong on U.S. securities to help basically 23 enhance their investment management process by 24 supplementing their investment management team with 25 risk takers in Asia to be able to transact should the
Page 191 1 to improve, you could do that. 2 Now, why would we do it? When we think 3 about best execution as a process for an institutional 4 allocator, we're trying to get the price at which the 5 order was originated. If we can achieve that price, 6 then we have 0 implementation shortfall and the 7 investment thesis is able to run on its own. 8 Typically, that doesn't happen. We have something 9 transaction costs degrade the ability to achieve that. 10 But the idea there to connect is that if we 11 had fully atomized workflows and on-chain 12 capabilities, you would want to do that closer to the 13 event, which might be in the after-hours sessions. So 14 that's the art of possible there. 15 MR. O'SULLIVAN: So, Will, comprehensive 16 answer as always. I'll share some feedback from our 17 customers that's been a number of different investor 18 types, all of which are institutional. We're one of 19 the world's largest prime financiers alongside running 20 a scaled cash equities business globally. We service 21 almost universally institutional customers. 22 Our customers' feedback ranges from total 23 disinterest to, hey, this could be an amazing 24 opportunity for us to extract more alpha from the 25 market. Because as we all know, while we believe the	Page 193 1 market environment develop. 2 And I happen to think that it'll begin by 3 being episodic in nature when some news event, whether 4 it be idiosyncratic on an individual company or more, 5 market-wide that generates a sectoral dispersion or, 6 generates just broad beta move, people will 7 institutional investors will respond to that. 8 How will they respond? We'll be a little 9 bit more comprehensive than a pure DMA offering 10 insofar as allowing some of our algorithmic platforms 11 to be able to participate in markets on the overnight 12 session. But we'll have limited staff coverage. 13 And so in the institutional community, 14 what's super important is that you have experienced 15 professionals that are examining order flow as it's 16 coming in, no matter its origination point, to be able 17 to provide, as Will indicates best execution for your 18 customers, but some component of that is to ensure 19 that there's human oversight over orders, especially 20 in new sessions where these orders will be much, much 21 larger than any retail order that's ever been sent to 22 one of these platforms. And so we need to be able to 23 find an efficient way to cover the activities whether 24 it be in location. 25 And by the way, we have talked to our team,

Page 194 1 0 people no matter their age want to work overnight 2 from an office in New York, which is dark by 3 themselves by the way, that doesn't sound great. 4 Okay. Well let them work from home. 5 Well, there's some specific filing 6 requirements attached to allowing a person to perform 7 execution activity from home. Well, great. I have 8 this team of super experienced professionals that are 9 based out in Hong Kong. They do the same exact thing 10 as my team that's based in New York quite literally 11 across my high-touch trading division, my program 12 trading division, my electronic trading division. 13 Oh, well, I have to now figure out how to 14 cross-register and abide by local regulatory 15 obligations as well as our domestic regulatory 16 obligations in order to perform the thing that's right 17 for our customers, which is to provide them with the 18 best ex. with human oversight of these new algorithmic 19 implementations in a market environment that we didn't 20 say we wanted. But we're all short to be able to 21 provide access so that everyone can perform their 22 fiduciary duty to their own end investors. 23 So now we're at the point where we're going 24 be technically ready. We're going to have to do 25 something that is probably Step 1 in a multi-step	Page 196 1 over. 2 MR. MASONE: Not at all. This is the 3 loquacious side of the panel. I like it. I would 4 say, you know, just to add on, I believe everything 5 that I've heard, Will in particular, about 6 institutional demand fully consistent with our 7 experience what we're hearing from clients. 8 Obviously, Citi's platform is overwhelmingly 9 institutional. 10 You know, I would say in my 20 years of 11 doing this, we've really migrated away from a larger 12 retail presence that we had when we were running a 13 retail market maker. We're an institutional shop. 14 The institutional demand for this is lukewarm to say 15 it best, very quite tepid for all the reasons that 16 have been just talked about on this and other panels 17 before us. 18 I think there's some really interesting 19 points raised, Will, in particular your comment about 20 tokenization and the promise of atomic settlement. 21 You know, I think those are real issues that we'll 22 discuss a little bit later in the panel. 23 And as a global firm, you know, we are quite 24 sanguine about the prospect of this market growing for 25 many reasons. And I personally think it will be
Page 195 1 process. Our customers are saying the same exact 2 thing as us, which is I don't want to lose my job 3 because some portfolio manager on the overnight is 4 experiencing a large move in a stock that they own and 5 they disagree reason that the security is moving and 6 so therefore, they want to trade. If I can't provide 7 them that access, me as a head of trading on the buy 8 side, I'm fired. I'm out of my job. So they have to. 9 So we're all trying to do the right thing in 10 a regulatory environment that doesn't allow for ease 11 of transition of responsibilities throughout the 12 globe, for good reason by the way, where we're making 13 technical changes to adapt to a platform that is all 14 kind of brand new but feels pretty familiar. 15 So I'd say this is Day 1 or day two of a 16 multi-year-long journey. We will be ready for 17 December 6. I do not think December 6 is the end 18 state of this market environment nor do our customers. 19 Very unclear to me how many people are going to be 20 ready. 21 But 60-ish percent of our major 22 institutional customers are asking questions about our 23 preparedness and then responding with their 24 preparedness both in the financing realm as well as in 25 the execution realm. Sorry, Mike, I probably took my	Page 197 1 because of episodic instances where be it geopolitical 2 events or earnings or elections. And like you said, 3 PMs may want to trade at that point. 4 Brian, I'm very interested in the stats that 5 you quoted about institutional interest as you're 6 looking at this. I think it's interest right now. I 7 think there's everyone's sort of waiting for this, and 8 I don't believe that December 6 will be the big bang. 9 Over time, this will evolve, and this will be an 10 iterative process. 11 So where are we right now? Like most of the 12 large institutional broker-dealers, we are approaching 13 this quite cautiously. Our intent is we're already 14 active in the pre and post. Our intent is to continue 15 to build out our offerings in the pre and post 16 throughout 2026. 17 We are not planning to necessarily go to 18 23/5 on December 6. There's a host of reasons for 19 that. You know, the largest of which I think are the 20 many unresolved or open issues around corporate 21 actions and global staffing, and all of the things 22 that have been discussed on these panels. 23 But two very practical points that I'd like 24 to raise just from a broker-dealer perspective. One 25 is, you know, December has typically -- in my 20 years

Page 198 1 of doing this, I don't recall a rollout -- a tech 2 rollout of this magnitude in nature being done either 3 in the last month of a year or the first month of the 4 following year. There's typically code freezes at 5 broker-dealers during those times. 6 And that's not to say this shouldn't be 7 done. And again something that is optional certainly 8 alleviates a lot of the concern there. But it's a 9 factor, and it should be -- you know, I wanted to make 10 sure that that point is made. That's just a practical 11 reality of life at a big broker-dealer. 12 And the other reality is just budgeting. 13 You know, this is very much technology dependent. And 14 a lot of the tech budgets are done, you know, at the 15 beginning of the year, and I don't think we had SIP. 16 Right? We didn't have a date for SIP readiness. We 17 didn't know if this was going to be a 2026 item, a 18 2027 item. So you know, a lot of this is being 19 budgeted for next year. 20 Those are just two, I think, very practical, 21 you know, kind of impacts to our desire or ability to 22 be ready. I would say if we had to, we would be. But 23 given the optionality here, we are very comfortable 24 taking a wait-and-see approach with the idea that we 25 will be there in 2027, especially as client and	Page 200 1 imagine. So talk to my team over in APAC, they'd 2 expect them to be able to cover them for the 3 activities that they're trading off that desk locally. 4 MR. GEYER: Yeah. And there are challenges 5 there. Right? 6 MR. O'SULLIVAN: Of course. 7 MR. GEYER: I mean, if we were to think 8 about the spread of time zones in Asia and the way you 9 segregate order flow, you know, there's a much larger 10 window of time that they have to be on the desk. So 11 the concept of that Australian trader coming in and 12 then seeing a book of all the world that they need to 13 pick up and start trading, not just the Australian 14 market versus India and where that closes. 15 So there are nuances to work through, but I 16 think the sort of infrastructure and the regulatory 17 issues aren't as pronounced as they are on your side. 18 MR. O'SULLIVAN: Yeah. I mean, from us, a 19 technical perspective is actually easy, meaning, like, 20 we have uniform technology for the most part. I mean, 21 we are a big bank, so nothing's totally homogeneous. 22 But we have uniform technology across the globe, so I 23 can easily get my people to be able to pick up 24 activity. 25 And now the challenging part is to figure
Page 199 1 institutional demand really starts to pick up, which I 2 believe it will. 3 MR. GEYER: Just one more point on that, 4 which is Michael and Ryan are bringing up the 5 complexities of being a dealer in this environment, 6 where from an institutional asset manager perspective, 7 I think our burden is less from a regulatory and 8 technological perspective. 9 We have 70 traders across 11 desks in seven 10 countries. So we port our trades to the local time 11 zones. So our APAC traders would be trading in these 12 overnight sessions. We don't have to worry about the 13 regulatory requirements associated with the licensing. 14 They are interfacing off the same technology 15 consistently from an order management system and an 16 execution management system. So there isn't a big 17 hurdle that we have to take on to be able to interact 18 with this opportunity that's coming together, unlike 19 your work. 20 MR. O'SULLIVAN: But, Will, if I may ask, as 21 you're moving that order flow from the United States, 22 obviously, to here -- to your team in Asia, and then 23 they'll move it to Europe, they would expect to deal 24 with the same professionals that they deal with on a 25 day-to-day basis from their counterparties, I would	Page 201 1 out how I can fit it all within the varying regulatory 2 frameworks that are required. And this is the big 3 difference between futures and FX that people talk 4 about with the follow-the-sun coverage models, which 5 are possible inside those asset classes. 6 They are not subject to the same constraints 7 and registration requirements that are present in 8 public equities, and that's true globally. 9 MS. SULLIVAN: Yeah. These are important, 10 and thank you. We're going to move to the next 11 section, I think, just to keep it going. 12 MR. GRIFFITHS: So with that in mind, so the 13 next section, we're going to be talking about the 14 guardrails. So we heard from, you know, the first 15 couple panels. People have been obviously spending 16 quite a lot of time thinking about guardrails. I 17 personally have been spending a lot of time thinking 18 about guardrails. 19 So, you know, the LULD plan has put in place 20 price bands for this December. You know, let's talk 21 about the future of the guardrails. So as part of 22 that amendment that was approved by the SEC, there's 23 this concept of, you know, LULD Phase 2. 24 So Brian and Dmitri, you both are on the 25 committee with me. Can you talk a little bit about

Page 202 1 LULD Phase 2 and what you see as the potential 2 benefits of iterating on that model? 3 MR. GALINOV: I guess I'll start. I'll 4 start. So just for everybody's kind of knowledge, 5 these LULD bands were discovered and developed to 6 curtail volatility. So obviously, there has been a 7 lot of concern that overnight, the liquidity is not as 8 deep as during the day. So there are going to be 9 volatility. So what do we do about protections? 10 So Phase 1, that was going to be implemented 11 on December 6, and it has been talked on the previous 12 panel, it's more kind of, you take two prices, one is 13 at 4:00 p.m., another one is 7:15, and there is 20 14 percent bands to it. And if the stock has news, and 15 it moves up or down a lot, it cannot trade outside of 16 those bands until 4:00 a.m. At 4:00 a.m., those bands 17 come off, and then it can start trading. 18 Obviously, it is very nice protection, but 19 it's a little bit restrictive because, look, if the 20 stock is in the news, something happening, these 21 moves, the last thing -- you know, and it's 22 legitimate, the last thing you want is to turn off 23 trading in that particular stock. You want to 24 continue trading. 25 So right now, we're working on Phase 2 of	Page 204 1 with different percentages based on the stock price? 2 And across the board, it's keep it simple, it's 3 working now. 4 But I think as we progress and get into 5 Inning 2 and Inning 3, we might want to become more 6 artful. I think starting out, you know, changing the 7 percentages might be a good next step. Right? 8 If you have a \$300 stock, maybe you're using 9 5 percent instead of 20 percent or something of that 10 nature. And then maybe as you get into the middle 11 innings and later innings, then you go to something 12 more dynamic that Dmitri spoke about. 13 MR. COULSON: I just throw a quick thing out 14 from issuers. I think they have a real concern. 15 They're fine when the prices are reasonable. However, 16 they'd want the price setting to start much closer to 17 the opening. 18 MR. HYNDMAN: Agreed. 19 MR. COULSON: And that's a part is you 20 really -- if there is news, you want a lot of 21 eyeballs. You want a big crowd. You want the wisdom 22 of the crowd, and you don't want the crowd asleep. 23 MR. GRIFFITHS: So that's a good transition. 24 So, you know, one of the things that was not 25 contemplated by the LULD Phase 1 is having LULD price
Page 203 1 those bands. That's going to be more dynamic and 2 really will look like very close to what's going on 3 during the daytime. So essentially, if the band hits, 4 there's going to be some waiting period. You cannot 5 trade, and then it will adjust at the new price, and 6 then it will start -- the stock will start trading 7 again. 8 And in my position, this is much better 9 implementation because it gives more flexibility for 10 the movement to take place and adjust and continue 11 trading rather than waiting until 4:00 a.m. for the 12 bands to come off. But I'll turn it to Cromwell. 13 MR. HYNDMAN: Yeah. I would say keep it 14 simple. Right? So we're still in the first inning 15 with Blue Ocean today. We take a snapshot of the 16 consolidated tape at 7:30, and use that as the 17 reference price. And we don't accept orders more than 18 20 percent away from that reference price. 19 It's worked since the beginning. It's 20 simple. The brokers like it. Everybody understands 21 it. When the retail customer gets a reject, they 22 understand why. It works. 23 I'm not saying we shouldn't change it. 24 Every now and then I poll my subscribers and say, hey, 25 should we get more artful here? Should we come up	Page 205 1 bands for the pre- and post-market sessions. Part of 2 the reason for that is sort of what you mentioned. 3 You need there to be times where, you know, markets 4 move in response to information, that you have sort of 5 unfettered price discovery. 6 But I -- you know, I think I've heard from 7 some of the other panels that, you know, people want 8 consistency in the guardrail. So can we talk a little 9 bit about -- and I'm going to switch up this order a 10 little bit. 11 So Will, maybe we're going to go for you to 12 get some thoughts on consistency in guardrails, and 13 then I'm going to toss this to Ryan, Mike, and Tim. 14 MR. GEYER: I'm sure Tim's chomping. 15 MR. QUAST: I am chomping. 16 MR. GEYER: Yes. Well, so what are the 17 components of transaction costs? You know, they are 18 the width of your bid-ask spread, the percentage of 19 liquidity that you're trying to consume, and the 20 volatility of the stock. Those are the ingredients in 21 how we think about how much is it going to cost to 22 trade. 23 So I would say from the allocator and the 24 issuer point of view, we would want to take a more 25 conservative approach to this than the commercial

Page 206 1 approach of keep it open, let it all discover itself. 2 And what I think has been thoughtful, and 3 Hubert articulated this earlier in the first panel, is 4 that this concept of a lot of material information 5 comes out in the first extended-hours session. 6 And depending on the intensity and volume 7 there, which would denote something of material 8 consequence, I think that could set a two-separate- 9 band concept of, hey, there's something going on here. 10 We're not at risk of a really thin market getting a 11 bad outcome for an end client. We have something that 12 needs to reprice. And there, you might allow for 13 wider bands. 14 But in the instance where you don't have 15 activity that's material in the extended session and 16 this is a thinly traded stock with wide bid-ask 17 spreads. Why do we have to have 20 percent? 18 You know, and I get the concept of, okay, we 19 all should be placing orders only with limits, and we 20 need to be mindful of our own action in there. But 21 I'm just worried that we could have distortive prices 22 as an issuer of ETFs and, you know, as an asset 23 allocator trying to trade in this environment, that we 24 just are causing more harm than is needed in that type 25 of thin, high-impact-cost environment.	Page 208 1 top 25 holders. And conversely, passive money picks 2 up \$350 billion a year, \$75 billion a month. 3 So as a public company, you're thinking 4 about how does this market help me capture part of 5 those flows? Well, essential to that equation is 6 size, liquidity, and the absence of volatility. The 7 Number 1 nemesis for passive money is standard 8 deviation, tracking errors. 9 I mean, if stock could go up 20 percent or 10 down 20 percent, and both of those things are bad. 11 You might think a 20 percent gain would be awesome. 12 Well, it's not for a public company. Because for 13 now -- for the next half, you're out of the 14 statistical sample that will be used for an ETF or to 15 track an index because you impute standard deviation. 16 You're now overweight those issues. 17 And so public -- and where does all of that 18 occur? Where there are no girders. So public 19 companies put information out into the market 20 historically, and I would say this move to overnight 21 trading is going to radically alter how public 22 companies introduce data into the market because they 23 will have to adapt. 24 And that's -- this is a fact. I mean, we're 25 not going to just sit here and take the fact that you
Page 207 1 MR. QUAST: Yeah. Twenty percent is 2 catastrophic if it were market-wide. And for any CFO 3 or CEO of an individual company, 20 percent is 4 catastrophic. And so I know we'll come back to this, 5 but I have very distinct suggestions here, and we're 6 not opposed to 24-hour trading as a constituency. 7 But one has to remember the public companies 8 are fiduciaries for their shareholders, and the 9 shareholder register today is dominated by a 10 particular kind of a buyer. And so then the job of a 11 public company is -- is to try to foster the kind of 12 product that that kind of money is going to buy. And 13 maybe I'll just make this point that most people may 14 not know this because if you watch CNBC, you would not 15 be aware that less than 10 percent of volume is coming 16 from active stock picking. 17 Active stock pickers as a constituency in 18 the market, you look at SIFMA data, Morningstar data, 19 Investment Company Institute data, we track it all, 20 lose 35 billion a month in net redemptions, most of 21 that shifting to passives. 22 And if you extend that out to an annual 23 basis, actives lose close to \$0.5 trillion a year to 24 BlackRock, Vanguard, and State Street, et al., Geode, 25 Northern Trust, all these firms that now dominate the	Page 209 1 have 20 percent girders overnight that are removed at 2 4:00 a.m., when there are no girders at all. Right? 3 This is a problem. 4 The two times where all of the volatility 5 occurs are in the after-hours session, the extended 6 after-hours session, and the pre-market session. 7 Well, what would you do as a public company? You're 8 thinking about, well, where is the buyer that I want? 9 Well, where is the cost the lowest? 10 It is in the closing auction followed by the 11 opening auction. So we certainly kept -- the core of 12 our business is counseling public companies about how 13 to defend your shareholders by reducing volatility. 14 And one of the things that we think about doing, which 15 we have socialized with the exchanges, with the SEC, 16 is why wouldn't you unhalt right into the opening 17 auction? Then you got two shots. You have two shots 18 at liquidity. 19 Now, this has nothing to do with overnight 20 trading, but it forces this on public companies. 21 Right? So all of a sudden, because we don't make any 22 money from this. Everybody else operating a broker- 23 dealer -- or a trading platform is looking at this as 24 a money-making opportunity. We're trying to not lose 25 money as issuers.

Page 210 1 How do you -- so this is a big issue for us, 2 and I think maybe somebody from our community should 3 be on the LULD Committee so that we have an input into 4 the things that are central concerns for public 5 companies. 6 MR. GRIFFITHS: All right. Well, I think we 7 should get on to some additional questions. So 8 Naureen, I want to talk a little bit about, you know, 9 disclosure to retail investors. So how should we be 10 communicating differences in market quality between 11 sessions to retail customers? And just give us your 12 thoughts on that, please? 13 MS. HASSAN: Yeah. So I think one of the 14 struggles we have is -- and we'd appreciate SEC and 15 FINRA help here -- is on best execution. Because best 16 execution is the way that we communicate that, you 17 know, our standards as broker-dealer to our customers. 18 You know, right now, we don't have a 19 consistent point of view on how we should construct 20 our best ex. between the data feeds we're getting from 21 ATs, and the data feeds that we'll now be -- you 22 know, the SIP and what we're going to get from the 23 exchanges. 24 So more standardization because it's that 25 best execution is really -- and that best ex. report	Page 212 1 And there are a lot of -- and there's a lot of 2 innovation happening from various firms around 3 bringing that to the market. But I think we all have 4 an obligation on that education point. 5 MR. COULSON: So, you know, I actually think 6 if we really want to educate investors, we should have 7 them -- every investor read Ben Graham's Security 8 Analysis. It's kind of impossible, but there is an 9 allegory, and Ben Graham spoke about this Mr. Market 10 who was a business partner. 11 And if you owned half a business and Mr. 12 Market owned the other half, and was a quite volatile, 13 and emotional soul. And everyone and every day he 14 would shout prices, you could buy or sell the other 15 half of the business with him, and it was usually 16 quite reasonable, but sometimes it was quite crazy. 17 And, you know, that's been a feature of the market. 18 And we are -- we should, you know, protect 19 capital, but there also is some volatility where 20 people like a deal. I mean, flash is a bad word in 21 our industry. My wife likes flash sales, and it 22 shouldn't be continuous. 23 So how do we do it? We're disclosure-based. 24 And the most important part is putting out in front 25 of investors the price and the spread. And this is
Page 211 1 is how we communicate with our clients. 2 I will say -- and, well, maybe I'll digress 3 on -- should I hold off on my other? 4 I'd say the other thing that I think from a 5 consumer protection perspective, and maybe even from 6 an issuer, is we're seeing a lot in the market around, 7 you know, tokenized equities. And I think this is 8 this drive for 24/7 trading, and the demand that we're 9 seeing from investors. 10 But what's currently out there and being 11 marketed as tokenized equities in the overseas 12 markets, not offered to U.S. consumers, is actually a 13 synthetic derivative. And I don't think consumers 14 understand that. And there's a big consumer education 15 gap that you're not actually buying the underlying 16 share. 17 You are buying just a price-tracking 18 instrument that can easily diverge from that. So I 19 think that's the other side of consumer protection 20 that we all need to be cognizant of and educate 21 consumers about. 22 And then the good thing is from the SEC, you 23 guys are doing a lot on the innovation exemption to 24 actually get truly tokenized equities where the 25 consumer owns the share out there in the marketplace.	Page 213 1 really interesting about where there is going to be 2 better spreads than you would see in the day from a 3 competition standpoint. 4 Because during the daytime, there's a rule 5 called the vendor display rule, which means the 6 BOAT -- if BOAT has a better best price than the 7 exchanges, it can't be shown by a broker-dealer to 8 their customers. Is the vendor display rule restricts 9 broker-dealers from showing an ATS. That doesn't 10 apply after -- outside of regular market hours. 11 Also, you know, order protection isn't going 12 to apply when the exchanges show up. I think we're 13 probably going to be fine because we have robust best 14 execution. But educating, you know, investors around 15 this is really going to be that this is not a perfect 16 market. If you want to be there, you want to do VWAP 17 trades, you want to do midpoints, you want to do 18 averages through the day, trade in the day. 19 And -- but this is a market we should have, 20 but it is not going to be the very busy part of the 21 market. And if people understand that, I think we're 22 in a very good place. And that's where, you know, the 23 private initiatives of the ATs has been let's have 24 this 20 percent band, and it restricts trading. 25 You know, on some volatile, we wait till the

Page 214 1 opening. And so I would put the point that the 2 private market has been, from competition and 3 collaboration, with their correspondents, has actually 4 created a pretty good example without the need for, 5 you know, a nanny-state regulations. 6 MR. QUAIST: Cromwell, that's -- it's a 7 meritorious point that the 20 percent halt stops it, 8 and it's not -- there are problems with the dynamic 9 LULD system. There's no question. I've used the 10 example of just last month. There were two -- one 11 stock went up 70 percent, one went down 70 percent. 12 The one that went down 70 percent was never volatility 13 halted. It just moved 8 percent every five minutes. 14 So the one that went up 70 percent was halted 13 15 times. 16 Now, I don't know how that's effective. I 17 think that we need to revisit that math, but generally 18 speaking, if you were to ask issuers how they feel 19 about this, you could summarize their concerns in one 20 word. It is volatility. It is the risk of 21 speculating at different times. 22 Arbitrage is all predicated on time, price, 23 and volatility, and if you extend the continuous 24 auction out further, you increase the probability of 25 the definition of volatility, which is changing	Page 216 1 we're going to talk about -- you know, so we're 2 talking about 23/5, 24/5. Now let's talk about maybe 3 24/7. 4 So I think from some of the comments made so 5 far, people are certainly thinking towards the future, 6 which I think very well may be a 24/7 trading 7 environment. So Brian, Cromwell, can you just tell us 8 how you're thinking about that? 9 MR. HYNDMAN: Sure. Sure. So 24/7 is 10 certainly where we see it going. We were the leader 11 in kind of getting the retail brokers into the 12 overnight, creating the 24/5. But 24/7 is where we 13 see the puck going in the next year or two. It might 14 get there via tokenization, like Naureen was saying. 15 Right? That might be a little slow-rolling, and I 16 don't know how the continuous net settlement is going 17 to work on the blockchain. 18 And I'm just not sure how much volume we're 19 going to see. But I think there's other ways to kind 20 of back into the weekend. Back when Blue Ocean 21 started, Blue Ocean, DTCC was open at 4:00 a.m. 22 Right? TRF wasn't open. And what we did, we traded 23 and we batched everything up. And we sent it to DTCC 24 at 4:00 and we sent it to the TRF at 8:00. And that 25 was a nice, happy world for three or four years.
Page 215 1 prices. 2 So for public companies, that subjects you 3 to a higher potential for what I will call the tyranny 4 of the minority. We see it happen all the time. 5 Public companies report earnings and 4,000 shares are 6 traded and move your price 20 percent. 7 And if you trade 4,000,000 shares during the 8 day, that just shouldn't happen. What you've done is 9 reprice the entire market for the executive team and 10 your top 25 holders, and the purpose of that was not 11 price discovery. It was a 24-times-levered bet by a 12 hedge fund with a prime broker. Well, that's -- 13 that's unfair to shareholders. 14 So how do you solve a problem like that? 15 Well, one, uniformity of girders. I think you need 16 uniformity of girders. And to Naureen's point, 17 clarity on best execution standards and market-wide 18 circuit breakers. If you're going to run a uniform 19 continuous auction market, then the rules should be 20 uniform, and they shouldn't be determined by the 21 presence or absence of liquidity from an issuer's -- 22 MR. GRIFFITHS: I think we need to stay on 23 time, but, you know, a lot of good thoughts on 24 guardrails. Certainly happy to continue that 25 conversation offline. For our next session, I think	Page 217 1 You know, then DTCC did a good job going to 2 1:30 and then going to 8:00. TRF, we know where 3 they're at. They're going to be at 9:00 come 12/6. 4 I think the industry has an appetite to go 5 back to what happened with Blue Ocean back in the 6 earlier days in 2022 and 2023, and trade earlier on 7 Sundays. So open up at 12:00 on Sundays. Sunday 8 night is the biggest night. 9 It's the biggest volume night of the week. 10 There's pent-up demand over the weekend. There's 11 geopolitical events, doors fly off Boeing planes, 12 there's DeepSeek announcements, and you get all this 13 energy to trade on a Sunday night. 14 I'm sure that there's an appetite to kind of 15 move that up in the day, not necessarily for the NFL 16 fans in here that are watching football at 12:00. But 17 for investors around the world, I think that there's 18 an appetite, and I think we can batch it up, send it 19 over to DTCC, and send it over to the TRF. 20 And I'm not saying that's a good long-term 21 solution. I'm saying that's going to force the 22 industry to change. Right? When Blue Ocean launched, 23 it wasn't a great solution, but DTCC took the lead and 24 changed really quickly. The TRF changed. And I think 25 if we start to do that on a Sunday, you'll see these

Page 218 1 industry events change. 2 DTCC will go ahead. They're already looking 3 at it. Right? I'm not saying they're doing it. 4 They're looking at it. So I think it's possible. 5 MR. COULSON: So I think we should put out 6 there that because it's said in the press a lot that 7 tokenization solves everything. And this idea that 8 stocks need to be tokenized to be able to trade on 9 weekends is -- it's a statement. I don't know if it 10 will turn out to be true. 11 I generally believe that we have a lot of 12 systems that we build up capacity for that we can use 13 to trade stocks the way we trade stocks that has a lot 14 of trust. Those systems, as Brian said, will move 15 slower. 16 So, you know, I take the same viewpoint that 17 Monday morning will become much longer. It may even 18 start Friday night. And we may not need to go beyond, 19 and we can handle, you know, holidays that way as 20 well, that we can keep the weekdays for actually the 21 settlements but just extend in to address the trading. 22 Now, where I disagree with Brian is this 23 time, I think it would be really good to get the 24 clearance risk, get NSCC going from the beginning. 25 Because for the -- for when we talk to clients, and	Page 220 1 percent. And so we need to be very careful. 2 We need to look at margin. The SEC -- you 3 know, the Fed hasn't changed margin for 50 years. 4 It's 50 percent for 50 years. The SEC is now a 5 systemic risk regulator. They should handle margin 6 for securities the same way the CFTC handles margin 7 for futures products. 8 So the world is going to become more 9 connected, but we are going to be the center of the 10 world. And we need to move forward and not wait. 11 MR. GRIFFITHS: Thank you. So Dmitri, I 12 want to get you in on this as well. So, you know, 13 other expansion to weekends, to holidays, is there 14 anything else that you're contemplating from an 15 exchange perspective? So from the last panel, had 16 this good analogy of the pit stop. Is that always 17 going to be an hour pit stop? Are we going to see a 18 shorter pit stop? 19 And then also, from the data presentation 20 that Dan made earlier, we see that 8:00 to 9:00 period 21 where exchanges are not trading is actually the most 22 active part of the session. Should we be thinking 23 about changes maybe to the timing of that window? Can 24 you just share what your thoughts are there? 25 MR. GALINOV: Sure. And look, just follow
Page 219 1 we're driven by broker-dealer subscribers who are 2 driven by their customers and correspondents, is the 3 technology we have is so good at taking risk out of 4 the market. Why would we not want to use it? And 5 that's an important part. 6 So because we need to be the robust markets. 7 There's tokenization taking place around the world, 8 and we need to compete. We need to be able to compete 9 on onboarding international investors. 10 You know, you look at these tokenized 11 platforms, they can onboard you in 30 seconds. You 12 know, you download your driver's license, you shake a 13 video of your face, and they're onboard. We need to 14 be able to be competitive to pull in the world's 15 financial assets. We need to use all the advantage of 16 blockchain and technology, but we can use it within 17 DTC. We can use it within our own businesses. And 18 it's actually probably going to be more trusted. 19 And -- but we want to build a robust system. 20 And what is important also is there is so much 21 leverage outside the U.S. in the tokenized-asset 22 world. And that can become incredibly dangerous for 23 issuers. Perpetuals are highly leveraged products. 24 And if that risk is coming into the U.S. for issuers, 25 it is going to be -- it's not going to stop at 20	Page 221 1 up on Cromwell. I think if we're going to learn from 2 the whole process, why don't you bring exchanges 24/7 3 from very beginning? Why does it have to be ATs, 4 then we go again through the same loop? Let's just 5 bring the exchanges. The exchanges are ready. Do it 6 properly. 7 To me, the biggest thing with the SIP, 8 certainly, it needs one hour to restart right now from 9 8:00 to 9:00. It happens to be very active time in 10 Asia. 11 So there are two things that, you know, 12 we're working on. And one was a Nasdaq proposal that 13 we onboard on, is instead of shutting down from 8:00 14 to 9:00, shut down from 7:00 to 8:00. And so this 15 way, it's earlier in Asia, so there's not going to be 16 as much impact by the fact that exchanges are not 17 there. So that's one proposal that we have out there. 18 The second proposal -- and the SIP plan's 19 flexible enough -- this one-hour shutdown, well, why 20 can't you shut down in 15 minutes? What do you have 21 to do for one hour? It's a computer, you know? So 22 essentially, work with the SIP to see if we can 23 diminish that time. 24 And kudos to MEMX, I think the most 25 significant change was not even outside the 23/5. It

Page 222 1 was the fact that the corporate actions now are 2 electronically processed. I mean, it's massive. So 3 certainly, you know, that's massive benefits that are 4 coming your way. 5 But talking about 24/7, and again, 6 currently, and we tried to do the exemption to operate 7 without the SIP. But certainly, I think the SIP is 8 not going to be there anytime soon in terms of 24/7. 9 I can't talk to the entire SIP, but, you know, my 10 experience on the committee and getting to 23/5 where 11 we are, tells me it's going to take some time. So I 12 think exchanges should be able to operate after 13 hopefully successful 23/5, they should be able to 14 operate as much as ATSS. 15 What we're planning to do, the SEC is not 16 going to allow exchanges to operate outside of the 17 hours. We're simply going to route orders to the ATSS 18 during that 8:00 to 9:00, as well as outside of those 19 hours. We feel that there is a significant volume at 20 the ATSS during the day. 21 There is actually over 50 percent of volume 22 or about 50 percent of volume trades off exchanges, as 23 well as now most of the volume on the overnight trades 24 on ATSS. I'm not sure how it's going to evolve when 25 the exchange is going to be, but there is a very	Page 224 1 now, in our view, with the clearing is the fact that 2 you cannot move the cash component. 3 MR. GEYER: Dmitri, why do you think SIP 4 won't be ready to evolve to an extended period? 5 MR. GALINOV: Have you been over to the SIP 6 Committee? 7 MR. GEYER: No. But that's why I'm asking 8 here on it. This is a big step. Right? 9 MR. GALINOV: Yeah. 10 MR. GEYER: They're going to. So why is the 11 next step harder? It would seem like that would be an 12 easy thing to plot out. 13 MR. GALINOV: I think a couple of pieces. 14 There is certainly technological challenge. 15 Certainly, New York Stock Exchange and Nasdaq and TRF, 16 they run on, you know, technology. That technology 17 has been there for a while. So one is that it's -- 18 look, you know, it's difficult to make that technology 19 to be robust. 20 And look, the whole world depends on it to 21 be very robust and run 24/7. It's a very big 22 technological challenge, in my view. But look, I'll 23 tell them, but that's the -- my opinion. 24 MS. SULLIVAN: Well, SIPs are the 25 responsibility of the exchanges.
Page 223 1 significant volume trades there. ATSS don't route to 2 each other. 3 So I think with the, you know, coming in 4 with the exchanges and with the smart routers, we're 5 planning to route to every ATS that allows us. So 6 far, three out of four looks like they're going to 7 allow us to route to them. It's going to be much -- 8 certainly much more robust market. 9 But going back to clearing, DTCC already has 10 a blockchain system that tokenized stocks that can 11 trade and settle 24/7. The issue with the DTCC is 12 inability to deliver cash against the movement of the 13 stock, and it's really based on the Fedwire. 14 So the biggest problem right now for 24/7 is 15 that Fedwire is closed on the weekend, and you can't 16 get the cash into your DTCC account. Interestingly, 17 there is a system called FedNow. So the Fed 18 introduced it in 2023. There are over 800 banks set 19 up for the system, and it's a blockchain system. And 20 you can move the money 24/7. 21 And so one thing what we would propose is 22 for DTCC to work closer with the Fed and incorporate 23 FedNow system for moving the cash. Or you can use 24 stablecoins. You can use Circle. You can use 25 JPMorgan stablecoin. But the biggest problem right	Page 225 1 MR. GALINOV: Yeah. 2 MS. SULLIVAN: And are also, you know, are 3 assisted by the advisory committee. So, you know, if 4 we want to see change, we have to speak in each of the 5 individual exchanges, and the exchanges have to work 6 together in order to create that technology. 7 But what I'd like to do, since we only have 8 five minutes left, and we haven't really talked about 9 capital formation in a way that Tim Quast would 10 probably like to. So I thought that maybe we could 11 let Tim Quast close out the show for five minutes and 12 talk about capital formation, expectations on IPOs, et 13 cetera. 14 MR. QUAST: I won't need five minutes. 15 MS. SULLIVAN: Okay. 16 MR. QUAST: I think I can give you half of 17 that back anyway. 18 MS. SULLIVAN: All right. 19 MR. QUAST: Well, so first of all, defining 20 what capital formation means to public companies, I 21 think, is important because it's a jargon term. So 22 for public companies, you know, question is, does this 23 market help you raise money, and then does it provide 24 an easy way for that money to come and go, and does it 25 promote a stable, reliable currency for transactions?

Page 226 1 That's what capital formation means. So you 2 took those, and you looked at the private market and 3 the public market, what would you conclude? Well, you 4 would look at the IPO market. So, you know, I started 5 in this profession in 1995, so I've done it a very 6 long time, 20-plus years on market structure alone. 7 And during that time, the number of public 8 companies is down by half, but ETFs have gone from a 9 1992 idea from State Street to 5,200 of them trading 10 in the U.S. market, more than the -- way more than the 11 underlying equities. That includes everything else. 12 So you would look at that, and then you look 13 at the IPO market, and over -- I traded notes with Jay 14 Ritter at the University of Florida, and I said, it 15 appears to me that over the -- you know, that over the 16 last five years, nearly every IPO a year later trades 17 below its IPO price. He said, I completely agree. I 18 mean, every now and then you might have one that 19 isn't. 20 So clearly, that's not working. And you 21 look at where the capital is being formed, it's in the 22 private market. And you listen to these panels and 23 you understand why. It's a tremendously complicated, 24 difficult place for a company to go and say, well, can 25 I raise money there, and will it let the investors	Page 228 1 public company I meet who is -- you know, we've got 2 12,000 securities. We've got a relationship with 3 about a quarter of them. They all say, what new 4 investors can you find for me? And can you become the 5 center? 6 When I started in this business, the U.S. 7 was the broadest market, London was the block market. 8 We're both now. And so getting overnight right, and 9 it's in the learning innovation mode, which ATS has 10 done a fantastic job in doing, is really important. 11 On the other side is we luckily have Jim 12 Mahoney in the crowd and -- who's Head of Corporate 13 Finance. Capital raising, cost of being public, cost 14 of disclosure, those are the things that are killing. 15 There have been a lot of idiotic panels talking about 16 that, like, oh, if we just made spreads wider, we 17 would get more public companies because retail brokers 18 would be able to charge higher commissions. You know, 19 that was like going back to the horse and wagon. 20 What we need to do, and this SEC has had a 21 great agenda of doing, you know, the registered 22 offering reform, ATMs for all SEC-registered company, 23 federal preemption for any company that spends the 24 money to be SEC reporting. There's all these areas 25 that we can attack because we've been putting all the
Page 227 1 come and go easily, and will it foster a reliable 2 currency for transactions? And the answer right now 3 is no, it doesn't do that very well. 4 Now, I'm hopeful that maybe out of this 5 process, as we expand the continuous auction, that 6 maybe we get a uniformity that makes it attractive 7 again. But that's the difficult problem for the 8 issuer community. You know, NIRI, we've lost a chunk 9 of our members because there are way more companies go 10 private than come public. And the ones that do are 11 tiny little companies that don't work in any market 12 where principally, public companies have become 13 collateral for ETFs. If I give you collateral for 14 money, what do you expect from that collateral? 15 Well, that it will retain its value, and it 16 won't be volatile because one or the other of us will 17 lose money on that and we'll have to hedge, and all of 18 these things now are imputed into our market that make 19 it very difficult for fundamentals to determine the 20 value of public companies. It's more about flow. So 21 I would hope we would solve that problem. I think we 22 have a shot to do it. 23 MR. COULSON: So, you know, I would say one 24 of the Number 1 reasons we're interested in overnight 25 trading is to get more investors involved. And every	Page 229 1 costs on public companies and none of them on private 2 companies, creating an arbitrage and that's the -- 3 MR. QUAST: I'd still say that the problem 4 is we have made ETFs the principal investment vehicle. 5 You know, if the -- and so that, you know, \$1.3 6 trillion of ETF shares are created and redeemed every 7 month, net \$100 billion to the good. 8 And you look at the concentration that has 9 arisen from that, it's very logical and predictable 10 and expected that if 90 percent of ETF assets are in 11 large caps, it's because they meet the capital 12 formation requirement. They are large, liquid, and 13 they are not volatile. And so all the assets 14 concentrate in those things, and now we have 150 15 stocks that are 75 percent of market cap, and I think 16 that is the problem. 17 Then it becomes inhospitable to IPOs because 18 there isn't enough data. I can't depend on an IPO 19 providing good collateral to BlackRock, Vanguard, and 20 State Street because it's unpredictable. You might at 21 the size of SpaceX, but we'll see. That, to me, is -- 22 it's not the topic for this panel, but we can come 23 around to it with some uniform rules, I think. 24 MS. SULLIVAN: I told you nobody was going 25 to fall asleep. So we've learned an enormous amount

Page 230 1 today. Thank you so much to the panelists. We're 2 excited that Tim Quast might be joining the limit up- 3 limit down committee. And we appreciate your time. 4 Thank you. 5 DIRECTOR SELWAY: Many thanks to the panel. 6 Thank you, Peggy and Adrian. Tim Quast, you're 7 bright, you're certainly not shy. And I think, too, 8 we'll put your booming voice to work in keeping 9 people's eyes open, keeping them awake during the 10 extended-hours session. So this concludes today's 11 events. 12 I think this was an event or a roundtable on 13 24/7, 24/5 trading. But we're going to adjourn at a 14 civilized hour today. A final reminder, we have 15 opened a comment file on today's proceedings. So we'd 16 love feedback. Folks in the room, folks still tuned 17 in if you are, that's File Number 4-913, if you care 18 to submit comments. Tim's already in. He's first. 19 So let him not be the last. 20 MR. QUAST: I encourage you to read them. 21 DIRECTOR SELWAY: So with that, thanks all. 22 We are adjourned. 23 (Whereupon, at 4:20 p.m., the meeting was 24 adjourned.) 25 *****	Page 232 1 CERTIFICATE OF REPORTER 2 3 I, Lee Ann Tardieu, reporter, hereby certify 4 that the foregoing transcript is a complete, true, and 5 accurate transcript of the testimony indicated. 6 I further certify that this proceeding was 7 recorded by me, and that the foregoing transcript has 8 been prepared under my direction. 9 10 11 Official Reporter: Lee Ann Tardieu 12 Diversified Reporting Services, Inc. 13 14 15 16 17 18 19 20 21 22 23 24 25
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