COMMODITY FUTURES TRADING COMMISSION

MEETING OF THE

TECHNOLOGY ADVISORY COMMITTEE

Wednesday, October 13, 2004

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Commodity Futures Trading Commission
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C O N T E N T S

P R O C E E D I N G S

ACTING CHAIRMAN BROWN-HRUSKA: I'd like to welcome everyone here today in what is our inaugural meeting of the Technology Advisory Committee.

When former Chairman Jim Newsome asked me to serve as Chairman of this Committee, I saw it as a great opportunity for the Commission and for myself to explore how technology has influenced market structure and the quality of markets.

As an economist, these are not only interesting concepts, but also very important concepts. And they are also very timely, in that over the past several years the structure of the futures markets and markets, in general, has and still is going under a great deal of change. And technology has played a large role in this, and I certainly don't have to tell you that.

We've seen advances in computer and communication technologies that have fundamentally changed the way we use markets compared to 50, or even 20 years ago. The ability to manipulate vast amounts of data has led to a far better understanding of how to price options, for example. They

have given risk managers far greater ability to comprehend the risk exposure and to control risk.

Computers and communication technology have also expanded the pits. Orders once phoned in to a broker and routed through paper and oral communication are now conducted through electrons on a global basis. The Commission has designated 11 entirely electronic exchanges, and the Chicago Board of Trade and the CME now execute most of their trades electronically.

As Chairman of the Committee, I'm also looking forward to exploring the issues that are raised by changes in opportunities made possible by advances in technology, and I'm especially interested in the policy implications of those changes.

As you can see from the agenda before you, today I would like to explore three issues that are impacted by technology. The first deals with the issue of how to conduct surveillance of electronic trading. We've heard diverging views. Some suggest that electronic trading makes surveillance easier. Some suggest that it actually creates situations where we're unable to see market activity, and therefore somehow we're at a disadvantage.

So I thought what would be useful is to have our very experienced and knowledgeable Steve Braverman, of the Division of Market Oversight, give us some perspective on the topic and give us a presentation especially on a review that they have been engaged in recently on this issue.

The second presentation will look at how exchanges have prepared to deal with disruptions in market operations. Don Serpico, of the CME, and Pat Gambaro, of NYBOT, will each bring us up to date with the preparations their exchanges have taken to deal with such events. These are vitally important. They are important to us as a Commission in our role as regulators and important to our government, to the President, as a whole, that we know that we're prepared to deal with these difficult issues.

Finally, John Davidson, of Morgan Stanley, will give us a report on an industry-wide disaster recovery test that was run just this weekend to see how the industry as a whole is prepared to deal with such events.

I anticipate and encourage each of you to take an active part in the discussion of these topics. It was my plan when I put this group together to create a diverse

group of participants on the Committee so that we can bring a wide range of viewpoints to the table.

And so I think just as with the Global Markets Advisory Committee and the Ag Advisory Committee, I think we really see this as a--and I'm going to speak for you, Walt--but I think we see this as an important way for us to bring together and learn, bring together divergent views and knowledge and expertise, and for us to learn as an agency where we best should go in the future and how we can best prepare for the future and the change that is occurring.

I also anticipate that we'll have more frequent advisory committee meetings, whether it be this Committee or others, to flesh out these important issues and anticipate them.

Before we get into the presentations, I would like to take the opportunity to recognize Walt, my colleague at the Commission, Commissioner Walt Lukken. Walt and I joined the Commission on the same day and it has been a real pleasure to have had the opportunity to work with him and I look forward to continuing to work with him in the future.

Commissioner Lukken, if you have any comments you'd like to share with the group, I'll give you an

opportunity to make them, and then follow with an introduction of the Committee members, followed by the presentations.

COMMISSIONER LUKKEN: Thank you, Sharon. I echo those comments. It has been a pleasure while we've come together, I have to admit it's a little lonely on the ninth floor, just the two of us, but hopefully we'll have some additions on the ninth floor soon. We'll see. It's good to see some old friends around the table and to meet some new friends.

Obviously, technology is a big issue that impacts the industry, and also the regulators of that industry. We're always trying to spot trends in the industry. Technology on its own has been a major impact on the business over the last 10 to 15 years. We've seen productivity in our economy double over the last eight years, causing standards of living to increase exponentially, if those trends continue.

That, in combination with the Commodity Futures Modernization Act, which opened up competition for our industry, has really led to some interesting issues that we are now having to look at. Some of them are on the list

today. Others, including intellectual property, are things that the Commission is going to have to deal with, where technology and competition intersect.

That's something--I'll plug my own panel at FIA Expo--that's something we're going to talk about in Chicago, and I look forward to exploring how regulators will take more of a role in that issue.

As an agency, we're now spending close to 10 percent of our budget on technology; and that is growing every year. These are for reasons that Steve will talk about momentarily. We're having better surveillance at less of a cost to the industry. We're able to do our job and impact you less, which is always a good thing.

We're also able to do enforcement issues better. We have web-crawling technology that is able to look at 100,000 websites a month. Using technology, we're able to do things better as an agency, and that's good.

We just recently launched our e-law initiative. This enables our litigation team to now go paperless, including from hearing real-time transcripts in courts of law. We're trying to catch up to what the legal community is doing already and that's definitely a positive trend.

Of course, technology is a double-edge sword. I remember five years ago when I was in the Senate, we had a hearing on electronic trading and technology. David Battan, who was working for Timber Hill--David Downey before him--was talking about some of the problems that could happen with electronic trading.

I think we as the oversight committee of the CFTC were a little starry-eyed about electronic trading, that it was the silver bullet. If we can only get there, then all our problems would be solved. And obviously we were wrong. Electronic trading has helped this industry. It is better with audit trails and other advantages it brings. However, there are other issues that arise because of electronic trading, and we will explore some of those in Steve's presentation today.

But I just want to conclude that I'm very happy that Sharon has taken on a lot of these interesting issues. I look forward to all the presentations today, and hopefully as an agency we'll learn from your insights.

Thank you.

ACTING CHAIRMAN BROWN-HRUSKA: Thank you, Commissioner Lukken. I think that you raise a lot of

important issues that we do want to go forward and look at. I know that I ran into Ed Rosen just before this meeting and we were talking about of putting our heads together as experts and individuals here and thinking about some of these IT issues and some of these issues that are created by technology and the advancement of different changes in trading mechanisms.

Well, what I'd really like to do--and I, you know, kind of went back and forth on whether I wanted to give a personal introduction of all of you. I would say that I'm just delighted that you have agreed to participate in this Committee. You were hand-picked and we're just so happy that each one of you brings something important to the table, and we really want to encourage you to raise up your expertise and your knowledge.

What I've decided to do is have you make a brief introduction of yourself and say who you are and who your affiliation is. Before we do, I need to remind everyone that you need to push the button on your microphone to get it to operate. There are microphones in between folks, so you might want to pass it down a little bit. But you don't

have to get right on top of the microphone for it to pick up your voice.

And after you've stated your piece, I need to remind you to turn off the microphone. If we get too many mikes turned on at once, we'll overload the system and generate feedback. And while I'm interested in feedback, that's not the kind that I want.

So let's begin the introductions. I'll lead off--let's see--let's start right here.

Pat.

MR. GAMBARO: Pat Gambaro, Executive Vice President, New York Board of Trade, Operations.

MR. DAVIDSON: John P. Davidson. I'm global head of institutional operations for Morgan Stanley.

MS. FERBER: Laurie Ferber, Goldman Sachs, commodities and economic derivatives.

MS. GABLE: Wayne Gable with Koch Industries, head of the Washington office, but economist by training. So I'm happy to be here.

MR. ROSEN: Ed Rosen, Cleary Gotlieb.

MR. DURKIN: Bryan Durkin, Executive Vice President, COO, Board of Trade.

MR. LEITNER: I'm Tony Leitner. I'm a regulatory consultant, after 24 years at Goldman Sachs.

MR. BAGAN: I'm Mark Bagan with the Minneapolis Grain Exchange, responsible for operations in the regulatory systems.

MR. OTT: Joe Ott, Vice President of Compliance with the Kansas City Board of Trade. I'm actually sitting in today for our president, Jeff Borchardt.

MR. TELLEFSEN: Hi. Jerry Tellefsen, Tellefsen Consulting Group Chairman.

MR. McPARTLAND: I'm John McPartland. I'm an independent clearing and settlement consultant often mistaken as an employee of the Federal Reserve Bank of Chicago.

[Laughter.]

MS. DOWNS: Yvonne Downs, National Futures Association.

MR. FOYLE: John Foyle, Deputy Chief Executive, Euronext.liffe, in London.

MR. GAER: Sam Gaer, Chief Information Officer, New York Mercantile Exchange.

MR. BATTAN: David Battan, General Counsel, Interactive Brokers, Timber Hill Group.

MR. MANNION: Marty Mannion, with Citadel, in our Execution Services Group, and I'm substituting for Matt Andresen.

MR. HEINZ: Jim Heinz, Managing Partner of Marquette Partners.

MR. PAULSON: Brett Paulson, Executive Vice President, CIO, at the Clearing Corporation.

MR. PIRRONG: Craig Pirrong, Professor of Finance, University of Houston, and Director of the Global Energy Management Institute.

MR. FALVEY: Jim Falvey, General Counsel with Eurex US.

MR. RAISLER: Ken Raisler, with Sullivan and Cromwell.

MR. MELAMED: Leo Melamed, sometimes with the Chicago Mercantile Exchange.

MR. GAINE: Jack Gaine, with Managed Funds Association.

MR. HERSCH: Ron Hersch, with Bear Stearns.

MR. SERPICO: Don Serpico, Chicago Mercantile Exchange, Operations. I'm substituting for Phupinder Gill.

MR. BRAVERMAN: Steve Braverman, Deputy Director for Market Compliance, CFTC.

ACTING CHAIRMAN BROWN-HRUSKA: Thank you very much. Thank you. I just wanted to say at some point I know that Peter Borish, from OneChicago, will also be joining us.

I should say that we will--just to give you the lay of the land here, we have an agenda here. You can take a look at that in your packet. We also have copies of all the slides. Did the FIA slides make it in time? I think yes, pushing it to the last minute.

But I wanted to ask you, Walt. You've mentioned you're on a panel at the FIA Expo. What day is that? Do you know?

COMMISSIONER LUKKEN: Tuesday.

ACTING CHAIRMAN BROWN-HRUSKA: Tuesday, okay.

COMMISSIONER LUKKEN: Tuesday at 2:30.

ACTING CHAIRMAN BROWN-HRUSKA: All right, just to make sure I have my proper flight schedule. I think I'm on a panel, too, on Thursday. So, you know, put in a plug for John, make it easier for him to sell tickets.

I think that we also have a plan to deliberate for a while. Steve Braverman will make his presentation and then we'll talk about market disruptions by Pat and Don, and then we'll take a coffee break, and we'll finish off with John Davidson, who will talk about the disaster recovery test. And hopefully we'll be able to wrap it up around four, and we'll have an opportunity for a brief reception for those participating today here until five. So we'll have some refreshments then.

So without further ado, I'll hand it over to Steve Braverman, and thank you very much.

MR. BRAVERMAN: Good afternoon to everyone. I guess the first thing I would like to say is I guess it's obvious that I'm the staff member at the table. Obviously, I forgot to put on my dark suit, but I like to be conspicuous.

What I'd like to do today is present some of the salient findings of a review that the Division of Market Oversight conducted to determine the implications of the recent dramatic growth in electronic trading in the U.S. for the division's own trade practice surveillance program and the manner in which that surveillance is conducted.

Among other things, DMO is responsible for ensuring that exchanges have effective compliance programs for enforcing their rules, including those prohibiting certain trading practices, and for monitoring daily trading activity in order to identify potential trading violations for further investigation.

It is within the context of this latter program, our own trade practice surveillance program, that our review of electronic trading was conducted. So with that brief bit of background, I'll begin the presentation.

As we all know, there's been a dramatic growth in electronic trading in the U.S. particularly over the last four to five years. Electronic trading in CFTC-regulated markets has grown significantly since 1999. Electronic trading as a percent of total volume at U.S. futures exchanges was 5 percent in 1999, and it grew to 42 percent in 2003. And as we all know, that number has even grown thus far in 2004.

This was one of the reasons that we felt we had to take a fresh look at how we should surveil these markets, and if there are any differences in these markets vis-a-vis pit trading.

The most dramatic increases, of course, have been at the largest U.S. exchanges. The CME, for example, in 1999 traded only 8 percent of their volume electronically. By 2003, it was up to 44 percent. The CBT traded 5 percent electronically in 1999, and that grew to 52 percent in 2003. Currently, approximately 60 percent of volume at those exchanges is now traded electronically. So we've had tremendous growth in this area.

Another reason that we decided to look at this area was because of the recent trend in designations by the Commission of all-electronic exchanges. We've designated over the last two years the CBOE Futures Exchange, HedgeStreet, NQLX, One-Chicago and the U.S. Futures Exchange. These exchanges have, and probably will continue to contribute to volume, and there will probably be many more coming along.

Again, the purpose of our review was to determine the implications of growth in electronic trading for DMO's trade practice surveillance program. We want to know what we can learn from exchanges and other regulators that have experience with monitoring electronic markets. And, foremost, we wanted to know where should we focus our

surveillance of electronic markets in order to be most effective.

In doing so, we interviewed compliance staffs at several SROs here that have electronic platforms, including the CME, the CBT, NYMEX, and we also interviewed NFA, which monitors electronic trading systems on behalf of several exchanges.

We also went overseas to talk to Eurex and LIFFE because, of course, they have been trading electronically for a long time. And we met with regulators overseas, including BAFIN, in Germany, CONSOB, in Italy, and the FSA in the UK, to elicit their insights and perspectives on surveillance of electronic markets. As you can see, it was not a real unpleasant assignment.

We gained a lot of insights from our interviews. In particular, we came away with several recommended focuses of surveillance for electronic trading, and we also came away with some very useful observations regarding other aspects of electronic trading which I'll get to in a moment.

The four recommended points of surveillance focus were the point of order entry, illiquid markets, side-by-side trading, and inter-market trading. These were all

raised by the interviewees, the exchanges and the regulators, as points which they felt should be the focus of attention.

First, I'll address order entry. With respect to order entry, the surveillance focus necessarily shifts from order execution by the floor broker in the pit to order entry by the terminal operator on an electronic system. The focus shifts because the algorithm now controls the execution. It's not the broker in the pit.

Order entry is the point at which human intervention occurs for those orders that aren't entered directly by customers into their own front-end systems, and this is where abuses can possibly occur. In particular, in the electronic environment a terminal operator controls the time of entry for orders not submitted by customers directly into the trading house by their front-end systems.

This presents an opportunity to trade ahead of a customer order. And, importantly, we found that there is no evidence of the time of receipt for telephone customer orders, which is the manner in which most orders are communicated when they're not entered directly by a customer into the front-end system. And it's important to note that

that time of receipt by the firm or the terminal operator is really critical to proving an abuse like trading ahead.

The second area--

MR. HERSCH: Excuse me one second.

MR. BRAVERMAN: Yes.

MR. HERSCH: How does that differ from--I'm trying to understand the distinction of how it differs from--sorry. I just want to understand how that differs from the distinction to the way business is handled in the traditional manner when a customer calls up on the telephone. Why is it different when a customer calls up and the terminal operator places the order on a terminal? Are you saying that you don't have a time stamp--

MR. BRAVERMAN: As distinguished from the pit.

MR. HERSCH: As distinguished from the pit, okay.

MR. BRAVERMAN: Yes. If an order goes down to the floor, the present requirement is that order be written up on an order ticket and time-stamped with the time of receipt, so that you have that as a piece of evidence when you're trying to prove trading ahead.

With respect to orders that are phoned in to a firm or a terminal operator, the rules right now--most

exchanges require that if an order is immediately executable, you don't have to write up an order ticket. If it's not immediately executable and you want to hold it, then you would have to write up an order ticket and you would have a time stamp. But the case is that most orders that are received by terminal operators are immediately entered into the system.

MR. HERSCH: Thank you.

MR. BRAVERMAN: Sure.

The second area of focus that was recommended by the interviewees was illiquid markets, which makes a lot of sense--increased likelihood of successful violations such as pre-arranged trading, trading against customer orders and wash trading. The reason for this: in illiquid markets, there's obviously a decreased probability that other orders are going to interfere with the illegal activity. So there should be a focus on illiquid markets.

The third area identified was side-by-side trading. Traders now have simultaneous access to open outcry and electronic trading in the same markets. This offers opportunities for abuses such as front-running an open outcry order on an electronic market, or vice versa,

and manipulating a price in one market to take advantage in the other.

Finally, the last area that was brought to our attention by the interviewees is inter-market transactions. Traders can now access multiple exchanges on a single screen simultaneously around the world, as we all know. Inter-market trading is increasing. The speed at which it takes places is ever-increasing--inter-market spreads, basis trades, over-the-counter versus futures. We have parallel products now trading on different exchanges--Treasuries. The latest one would be metals. And these offer opportunities for trading abuses.

One case that was brought to our attention in our review, I think, illustrates the importance of these four focus points. In this case, a firm receives a large customer order to buy CME Eurodollars and sells CBT Fed Funds. The firm traded ahead of the sell lag in the pit, going short Fed Funds in their house account. The firm then entered legs of the customer spread order, buying the Eurodollars on GLOBEX and selling Fed Funds on then a/c/e system at the CBT.

And the firm took the other side of the sell order on a/c/e, effectively offsetting its short position in the pit. The result of the transaction was that the firm profited by trading ahead of the customer and trading against the customer. The customer was injured because it received an inferior price on electronic system at the time that it could have gotten in the pit, so that, in sum, this type of activity involved all four focus points. It involved an inter-market transaction. Markets were trading side-by-side. It was a relatively illiquid market, and it involved trading ahead at the order entry point.

In addition to the four focus points, the interviewees also pointed out some very useful observations regarding other aspects of surveillance of electronic markets. These involved the effects of trade anonymity on surveillance capabilities, the need for vigilance regarding novel violations which may occur in the electronic environment and perhaps not in the pit environment, the impact of electronic trading on customer abuses. Are there fewer customer abuses?

First, effects of trader anonymity. Trader anonymity may affect trader complaints of possible

wrongdoing by other traders. It was observed that fewer complaints are being received by exchanges with respect to electronic trading, possibly due to the fact that traders are not visible to each other.

It's also more difficult to identify relationships between traders, making it harder to direct data-mining to detect correlations among traders because of the dispersement of traders. These are both very important components to a successful surveillance program.

Secondly, we need to remain vigilant with regard to novel electronic trading violations. Traders and exchanges still face a steep learning curve. As more traders become more familiar, new types of violations will most likely be attempted.

We've heard about some new potential violations. I'm sure we've all read about flipping or spoofing several months ago which took place overseas on Eurex. And taking the improper advantage of an allocation algorithm is something that we saw at one of the exchanges that we interviewed, and I'd just like to go through those just very quickly to give you a sense as to what those involve because I think it's important to understand that.

In flipping and spoofing, as I said, it occurred on Eurex in early 2004. A trader entered a large size offer below the current market, a very large size offer below the current market. That offer attracted smaller offers from other traders. The trader then canceled his large order, reversed to the bid side when the market went lower, and hit the offers that he attracted by his initial large offer. And he profited as the market went higher and then liquidated. Some traders argue that this practice caused a disorderly market and should be banned. This is something that certainly is unique to electronic trading.

In a case described to us which involved really taking improper advantage of the allocation algorithm, in this case a firm knows that the spreader algorithm uses price and quantity priority, but not time priority in its matching algorithm. The result of that is that large orders at the best price get the larger share of the fills.

So what happens is that the firm receives several large customer spread orders. The firm entered an unusually large proprietary spread trade on the opposite of the market before entering the customer order. The intention there was to lock out other sellers at the same price because of the

algorithm so that the firm could trade against its customer order and then covering the remainder of its large sell order, which was initially put in so that it could, in effect, take the other side of the customer's order.

And, thirdly, there were observations, interesting observations on the impact of electronic trading on customer abuses. All the U.S. SROs that we interviewed stated that electronic trading appears to have reduced customer abuses, that they were getting fewer hits in their electronic surveillance systems.

The reasons for this: the anonymous automated nature of the order execution process in electronic trading, less human intervention, and the comprehensive, unalterable electronic audit trail which perhaps is a deterrent to trading abuses on electronic platforms.

As a result of the review, the Commission, the DMO in particular, is going to focus its surveillance on the four points identified where electronic trading is most vulnerable to trading abuses, ensure that the new CFTC trade practice surveillance system which is currently under development--we're reengineering and developing hopefully a state-of-the-art system that we will use in our own trade

practice surveillance, an automated system, and we want to make sure that that system has robust capabilities for detecting the types of violations that can occur in the electronic environment, as well as pit violations.

And we want to explore approaches to addressing order entry vulnerability and the capturing of the time of receipt for telephone orders which I mentioned before with respect to trading ahead.

One possible approach to that issue is the recording, time-indexing and retention of telephone calls in which customers place orders. This was something that was mentioned and recommended by all the U.S. SROs that we talked to. I think it offers substantial benefits, and that technology over the years has reduced the burden.

The benefits of recording: It would close the gap in an otherwise comprehensive electronic audit trail. Without an automated record of when a telephone order is received, as I said before, the order is vulnerable to abuse, particularly trading ahead, before it's entered into the system and captured by the audit trail. Time-indexing would capture the exact time that the order was received. And this, of course, would provide very useful support for

effective investigation and prosecution of customer abuses of trading ahead, and SRO and the CFTC experience has showed that recording evidence has proved highly valuable.

It would also reduce the burden of recording. Today's digital recording time-index process is less costly and onerous than the old analog system of recording. Computer storage of recordings is easier, cheaper than analog tape storage, and most FCMs already record phone calls for dispute resolution purposes.

In conclusion, I'd point out that this review is necessarily preliminary in nature. As we all know, electronic trading is still evolving. Exchanges and traders still face a steep learning curve with respect to surveilling these markets, and as traders' knowledge increases, some will seek new ways to game the system.

As a result, we're going to continue our dialogue with the SROs regarding new developments in electronic trading, so that we will continue to have an aggressive and effective trade practice surveillance program here at the Commission.

That concludes my presentation. I'd be glad to answer any questions.

MR. TELLEFSEN: Steve, could you tell us a little bit more about how this new surveillance system is going to work generally, where the data comes from, what it does and how it does it?

MR. BRAVERMAN: Right. Well, we are really in the very, very early stages of developing it, but we anticipate that we will continue to receive trade data from the exchanges, as we have been doing for many years with our current system. And we receive right now daily trade data, time and sales data, and we combine the two into our current system and anticipate that we would be doing the same with our new system.

Our new system is--my understanding is that it's going to take a couple of years to develop, but we are going to be rolling it out incrementally so that we will be getting some use out of that in the near future, hopefully.

MR. TELLEFSEN: Thank you.

ACTING CHAIRMAN BROWN-HRUSKA: Ken, you and I had talked about this some time ago--the question of whether there are any kind of factors that we should consider especially from a legal perspective of the recording of

transactions, of any kind of order discussions between customers and the clerks.

And I don't know if you've thought about any of these issues, but I just thought that you might want to share your thoughts.

MR. RAISLER: I guess I had one sort of general observations in terms of Steve's presentation, and that is that a lot of the comments obviously focused on electronic trading, which is what this Committee is about, apply equally to the existing trading environment. And issues about recording certainly would be relevant to that market as well.

I think this is an area that the Commission has been reluctant to go to for a long period of time. And, you know, I think the issue of document retention across a lot of areas of activity in the marketplace is a very considerable expense and burden to doing business in a whole variety of regulated and even unregulated, or what people think to be unregulated markets.

So I think it does require some pretty careful examination before going down that road, and also I would be concerned to impose requirements that might bias people's

decisions as to where they would trade, and whether that's an OTC-regulated market or pit versus electronic market, because I think these are all material decisions.

I don't dispute the value of that information in the abstract, but every piece of information that you collect does have a cost and I would just want to be mindful of that cost in trying to evaluate what the benefits are.

MR. BRAVERMAN: Yes, I agree. I think that those are, you know, very interesting observations and certainly not lost on us here, and we will have to consider very carefully your comments.

MR. HEINZ: Steve, I have a question, Steve. By the way, nice job on this because this touches on a lot of things we've witnessed in the markets that we trade. But I have one question for you

The flipper, who by the way is still alive and well--as much as he has hurt and harmed a number of people, can you tell me why that activity is illegal? What is it that he is doing that is illegal?

MR. BRAVERMAN: Well, hopefully I didn't say it was illegal. The issue at the time, as I recall, was that it was potentially illegal, that there were locals, I

believe, in London who were trading Eurex markets who noticed this on their screens and complained to the authorities.

The outcome of--I believe Eurex was investigating that circumstance. The outcome of that investigation I'm not certain of. To my knowledge, there were no findings of illegal activity, but quite frankly I'm not certain if Eurex has completed--or if BAFIN is looking into that and has completed their inquiry into it.

One could imagine a circumstance where if it was determined that that type of activity was disruptive to the market that one could charge that trader with something like, you know, conduct detrimental to the interest of the exchange or something like that, not a specific, per se, trading violation. But to my knowledge, I'm not aware of any charges in that regard. So if I implied it was a violation, that was incorrect.

MR. DAVIDSON: I'm having a real hard time with seeing any violative behavior here whatsoever, and I'm also having a hard time seeing the point that someone was harmed. Someone lost money. That doesn't necessarily mean that they were harmed. Markets go up, markets go down. It's an open,

transparent market. A person took risk in putting his order in. The people that followed on put their orders in, knew their orders can be canceled, and they happened to be a little slower on the trigger than this individual and/or computer was.

I fail to see violative behavior. I fail to see the conclusion that the market was disorderly. Disorderly is a result; it's not something that necessarily occurs by intent. And a certain amount of disorder is necessary in markets.

I also completely fail to understand the conclusion that it's unique to the electronic trading environment. Absolutely no reason you couldn't do it in a telephone market, or conceivably even in a trading pit.

ACTING CHAIRMAN BROWN-HRUSKA: I'll go ahead and call on you, David.

MR. BATTAN: This is also an issue that's very lively on the securities side.

ACTING CHAIRMAN BROWN-HRUSKA: I was just going to say--

MR. BATTAN: Unfortunately, I'm intimately familiar with it because we have a lot of active traders

that we euphemistically call active traders who are sort of day traders who have figured out that on the options markets, the specialists guarantee to fill a certain number of contracts. So they put in a one-lot order on one exchange and they improve the bid or the offer. Then they hit their own bid or offer for a ten-lot on another exchange, and the specialist on the first exchange has committed himself to honor the prices on the exchanges.

So therefore the customer gets a better fill and they can repeatedly--especially using the electronic system, they can do it repeatedly both going in and coming out and make quick profits. People might want to know that we have taken the position that--at one point, we took the position that it was not market manipulation because the exchanges are very aggressively pursuing broker/dealers who have these customers.

Even if you have no knowledge of what they're doing, even if it's done entirely electronically, they have been extremely aggressive and have taken enforcement actions against firms-- not only against the customers, but against the firms. And there's at least one SEC settled case where spoofing or small updating was considered to be, you know,

10(b)(5) fraud. But it was a settled case. Anyway, it's a very tricky issue.

ACTING CHAIRMAN BROWN-HRUSKA: I did pick up on that. I mean, I remember the stories of stepping in front, and whenever you put a large order up that people will step in front. And in some sense, it does seem to be--I mean, the reason that they would put in those small orders right behind that offer is to make money, to begin with.

Leo, did you have a comment?

MR. MELAMED: Well, I do have a comment, maybe a lot of comments, and I mainly want to loan support to the comments by John Davidson and Ken Raisler. And I grant you that an electronic trade will create opportunities for violative abuses. there's no question it'll be an evolving learned process by people who want to violate the rules and they'll find ways to do so, and that will be a role for the CFTC.

I also clearly think that your example of running ahead of a placed order the way it did is a violation, and it's clear, and so forth. But there is this danger that by assuming that every tactic by a trader, be it in the pit or be it on electronic, is automatically a disruptive or

potentially violative action is highly dangerous because the ultimate result--and I'm sure Sharon and Walt understand this that in the perfect world where there are no violations or opportunities to violate anything, there is also no market.

The example that spoofing--as James Heinz indicated, what is wrong with that? When I first learned to trade, maybe before some of you, it was at the New York Mercantile Exchange that I was trading potatoes. And there was a fabulous trader there who was known around the world as a hugely successful trader. He was, and he taught me once that he attracted a great deal of attention, no matter what he was doing.

When he walked into the pit, the entire New York Mercantile Exchange stopped to look, what is he going to do in Maine potatoes. And he took advantage of that. He showed me how he walked into the pit and began to buy furiously. The pit prices rose dramatically. He had sellers everywhere selling to the pit, to every trader that was buying who had assumed that this grand trader was buying. In fact, he had sold most of his position out because everyone around him had orders to sell.

Now, that was a tactic and it was used in the pit. It's something like this spoofing or flipping, or whatever it is. It's not very much different. I doubt if it's a violation of any kind. As John Davidson indicated, it is a tactic. But be careful if you go down the road where tactics that are clever are considered violative. It's not a road a free market wants to go to.

MR. ROSEN: To my mind--and I haven't reached a conclusion about the conduct and I would wonder--I would also want to know is this sort of sub-human reaction time in which the offer is placed and retracted? I think what I would want to think about is whether you could conclude that the individual was manipulating the market by creating a misimpression of what the real trading interest was.

I think that would be the analysis, and I think on the SEC side the 10(b)(5) is also, you know, sort of a market manipulation provision. And what I think is a potentially distinguishing factor, though, that both John and I think--and I think it's also probably true in Leo's example, although there are some permutations on it where it may not be the case.

This person is potentially at least subjecting his order to the market and taking the risk of getting hit. If that's true, I think that would affect the analysis. If he was sort of doing this electronically where it was, you know, put in and then withdrawn in sub-human response time and then the other orders were generated because they were sort of electronically programmed to happen, you know, I think I'd be a little bit less sympathetic to the argument.

On the securities law side, you know, obviously, if you're buying at the market and at the same time selling, so you have no market risk, even through surrogates, and your orders are meeting up, that could create a misleading impression of trading interest as well. On the other hand, if they're not timed to coincide so there's some market risk and slippage in the executions of the buys and the sells, that would change the analysis. But I do think that would probably be the lens through which you could look at activity like that.

ACTING CHAIRMAN BROWN-HRUSKA: Whether putting the position on creates a risk or there is a risk that it won't succeed.

MR. ROSEN: Or it will be lifted, in which case it's no longer a misimpression of the trading interest.

ACTING CHAIRMAN BROWN-HRUSKA: Pat, I know you--

MR. GAMBARO: On the open outcry markets, this happens everyday, except that it's surveilled by the floor broker and it's an ethical thing. So if they see somebody trying to play games, if you will, as opposed to an electronic marketplace, there will be things done on the floor itself to correct itself. They won't allow this type of activity to continue because it touches off stops; it does a bunch of things that gets the brokers in dismay with their customers. So it's kind of surveilled on the floor, as opposed to not being surveilled instantaneously in this electronic world.

ACTING CHAIRMAN BROWN-HRUSKA: Sam.

MR. GAER: More to Pat's point, and also to Edward's point, yes, it is surveilled on the floor, but it's really surveilled in a free market sense, in that if you're going to offer and a market plays down, you are placing yourself--or that order for that customer is in the marketplace; you are at risk. If somebody takes out that

offer and bids the market up on you, you're going to lose money.

So this is done naturally, and whether it's done by a human being putting his head down and offering through bids or whether it's done by an algorithm which simulates that by basically saying, okay, you know, create a big offer because I know that there are participants in the marketplace who follow me and then pull that offer and grab everybody who follows me, I fail to see the difference, except for the fact that the person who is creating the strategy is devising a strategy. He's putting himself at risk and he's going into the marketplace with it. And I think to regulate the creation of strategies, you're stepping into an area that we might not want to be in as a free market.

ACTING CHAIRMAN BROWN-HRUSKA: Tony.

MR. LEITNER: These meetings are great, but I think what we take away from them often is buzz words. So I'm going to give you three to consider as a Commission in guiding how you react to a report like this and developments in the electronic marketplace, keeping in mind that among the evolutions taking place are not only in the marketplace

itself and the electronic trading there, but how orders get to the market essentially untouched by human hands and without for the most part now somebody talking to a salesman.

The issues with respect to potentially people who do talk to a salesman while electronic orders are being delivered, you have, I think, quite adequately said.

But with regard to this manipulation issue, I would give you three buzz words--clarity, consistency and responsibility. By clarity, I mean that just as this discussion indicates, people's views of what is good or bad tend to evolve over time. And what constitutes manipulation or bad conduct, while there are some legal definitions of intent, capacity, the intent to create a false and misleading price--those kinds of things have always been out there. Finding it and recognizing it is in the eye of the beholder.

By consistency, I mean that exchanges set their own rules, and they potentially can set different rules about access and what is fair, you know, in the marketplace. In an electronic marketplace, it's difficult for an order entry firm that may be members of those different markets to

have tools, electronic tools that allow them to distinguish among exchanges with regard to some of the rules the exchanges set. Again, we've met that in the options markets, in particular, where the CBOE may have a different rule for electronic order entry than the AMEX. And as an order entry firm, you try to figure out which one is which.

So the Commission's role here is potentially to police the exchanges and make sure that where there are disparities that could be, you know, potentially difficult inconsistencies that they be dealt with.

And the third buzz word is responsibility, and that is, you know, when misconduct is detected, whose misconduct is it? Often, you know, in this environment it's the customer's misconduct and the exchange doesn't necessarily have a hook into the customer. It has a hook into its member or the order entry firm.

That's an issue that this vicarious liability issue where the firm is then held responsible after the fact for "knew or should have known" that the customer was committing the violation is, again, a standard that often bites us after the deed is done and without the ability to detect and surveil in advance for what that's going to be.

So those are three buzz words I would leave you.

ACTING CHAIRMAN BROWN-HRUSKA: Yes, Ron.

MR. HERSCH: First of all, I still don't see, Steve--and maybe we could talk about it after--the distinction that you tried to point out to me with respect to the audit trail and the telephone order versus electronic order with respect to time-stamping and things like that. We can talk about it later, but I don't see the distinction.

But in sort of carrying on that argument for one moment, and some of the comments made by my colleagues here, the one sort of red flag I would put up is that customers and intermediaries are finally beginning to enjoy what I call the technology premium that is coming back to us because of the change from open outcry to electronic trading.

And what I hope doesn't happen is that in an effort to make sure that the business is surveilled properly that we don't end up heaping more extra costs on intermediaries, which ultimately get passed on to customers, than exists right now, so we end up losing the premium that, you know, took us so long to earn.

Secondly, I'm sure that the Commission is working on a variety of different areas. I would say if I had a list of priorities where I would make my first hit, it goes back to what Tony just said. One of the things that intermediaries and customers are beginning to suffer from and will suffer more from is the inconsistencies that exist between the policies on the electronic exchanges.

It's very difficult to maneuver through that mine field right now. There's different error policies, there's different limit policies, different margin policies, different order entry policies, different surveillance policies. And that's something where it would be good for the Commission to take more of a leading role because at the end of the day that will protect customers more and it will save the customers money.

ACTING CHAIRMAN BROWN-HRUSKA: Laurie, do you still want to throw in?

MS. FERBER: Thanks, Sharon. Yes, I think this is a very good study and a very good attempt to get ahead of difficult issues. You know, echoing most of the earlier points, but tying a few things together, I just look back to the beginning and the notation of the dramatic increase in

electronic trading, but really just on the largest exchanges. And I think that obviously many of the exchanges have a tremendous, long way and a difficult way to go yet in beginning to break into electronic trading.

And I also note what, to me, was a very important fact here and one that I don't think there was a lot of attention paid to that all of the U.S. SROs that were interviewed stated that electronic trading has reduced customer abuses. And I tie that together with, I think, Ken's very important point that there are significant additional costs, and sometimes hidden costs to increased regulation, increased requirements, and taping and things like that, and those costs can be friction in decisions about where people trade or difficult decisions about adopting electronic trading and things like that.

So I think--and obviously many of us around the table are struggling with whether some of these things really are violations or whether they're just smart trading and our own problems with how to analyze smart trading when you take it to an electronic trading environment.

So I think this is an important study, but I think it's early days, and I would really just echo the caution

that I think many of my colleagues here have noted to not go too far in either imposing regulation, and to Tony's point about clarity, but, you know, clarity should not come at the cost of collecting so much information about the trading that we scare people away from developing the electronic markets.

ACTING CHAIRMAN BROWN-HRUSKA: John.

MR. FOYLE: Chairman, I'd like to echo Laurie's comment just now. We at LIFFE feel that the scope for abuse of customers has been significantly reduced by automated markets, partly because of the quality of the audit trail, which is a disincentive for people who might be minded to do it.

But I'd like to say I can prove that that's the case, and that wouldn't really be true because we at LIFFE don't have the same quality of audit trail now with regard to the time of order receipt, for example, as we had when we ran a floor. For many years, while we still had a floor, all phone lines to the trading floor were audio log-tape recorded, and with members' consent in the first place. And also with their consent, we had access to that record for surveillance purposes.

No good browsing; awfully boring, and you've got to know what you're looking for and be put on notice by some other event, a pattern of trading or by information supplied. But if you know what you're looking for and can pinpoint when things occurred, that telephone record was awfully powerful in providing evidence to the disciplinary and investigative process.

And we don't have that now. Most large orders came through the floor directly, so we did capture the time of the order being placed by the customer for the large-size business. A lot of other orders came through members' offices, and Ron Hersch's point there is a hundred percent valid. We didn't have a requirement for audio logging of all those in members' offices.

Having moved off the floor, we haven't required that all our members audio-log every phone line on which they get a live order. It would be absurd for one exchange--no matter how high a proportion of a broker, FCM's business is done on LIFFE, he's dealing on umpteen other markets and this is not something which can be tackled by one market as a requirement, or even in terms of reviewing the thoroughness of a member's procedures because risk

management, risk assessment is going to be a major part of the approach here, not just looking at individual incidents. No one exchange can do that.

So one question I'd like to put forward for Steve and his team to look at in the future is now that the focus needs to be on what happens in members' offices--it won't be the guy on the terminal, by the way, who gets a chance to do the malpractice, but now that the focus is on FCMs' offices, who does that? Do you really look to individual exchanges or can it only be done through a collective effort, or does the regulator have to take on the work of assessing how sound members' procedures are and investigating general compliance as opposed to specific incidents?

And the second comment I'd like to make is that you're going to need an awful big system to handle all the data that's going to be thrown at it when you automate your review of trading data. You need all the bids and offers, of course, as well as the trade data. And we're now seeing the development of indicative pricing systems.

Not that I think that's an excuse for trying to patent them, but where a process just outside the exchange trading mechanism where people can offer indicative prices

as a first step toward getting business done may become, may become, a significant pass-off the way contracts get made in certain contracts. And that indicative pricing mechanism outside of an exchange will be the area where you've got the possibility for abusive behavior through offers or bids which can't be hit being put forward into the marketplace to mislead other people.

ACTING CHAIRMAN BROWN-HRUSKA: I've broken it. Okay, now I've fixed it.

I wanted to give the market where the flipper lived an opportunity to kind of give us some of your impressions as to, you know, how we can best deal with this kind of tactical activity.

MR. FALVEY: Actually, despite appearances to the contrary, I actually work for Eurex US and not Eurex. So that is not a Eurex US issue. And anticipating that this question would possibly come up at this forum, I spoke with the folks back in Frankfurt about the matter and they have addressed it with the BAFIN and other appropriate regulators locally and it has been taken care of.

I'm not at liberty to say beyond that what the resolution is, but they would be delighted--again, they

would be delighted, I'm sure, again the compliance folks from Eurex, to come in and brief the staff in a confidential manner as to the resolution.

But that actually wasn't why I was raising my hand a second ago. If I can make a quick comment and then a question for Steve, the comment is just echoing what Ken said relating to essentially what amounts to electronic discovery, phone records and other electronic data.

Having previously been a litigator, and thankfully no more, I can tell you that while technology has gotten better, it is still very painful to sort through lots of electronic data. And in some cases, it's much more expensive than the traditional paper data to go through these days. The systems just aren't quite as perfected as we would like and there's still a lot of sorting and manual going through the data. So from a firsthand account, I can tell you it's very expensive and not a simple process.

That said, I understand where you're coming from, Steve, and I do think it's important. But again just to sort of echo what everyone else has said, it is a balancing act that I think you need to take into account.

The question for you I had quickly is on direct access from market participants and customers, which seems to be a growing trend at a number of the exchanges, and whether your study took into account that phenomenon and how that will possibly affect some of your surveillance.

MR. BRAVERMAN: The short answer is, no, it didn't. But, you know, this review is, as I said, preliminary in nature, and I think we're going to have to delve into that aspect more, you know.

We know that many customers now have front-end systems that are being offered by the various exchanges, and many of those orders go directly in by the customer. There are other exchanges where they don't have that access and orders are communicated in other ways. So we're going to have to continue to look at that aspect and how that impacts surveillance because it does present a lot of unique issues when you're talking about a customer entering the order directly and he becomes part of the audit trail, and what information does an exchange or an SRO have access to with respect to the audit trail when the order is being put in directly. So, yes, there are certainly a lot of issues that we're going to have to look into there.

ACTING CHAIRMAN BROWN-HRUSKA: I see a lot of hands here.

Yvonne.

MS. DOWNS: Just very quickly, the question of consistency, I think, is so key. Looking at the way trading occurs across so many markets and being that I've been at a couple of different exchanges, even though you think the audit trails may be generally consistent, you do find enough anomaly in them that it's very difficult to do surveillance equitably across the different markets without having some consistency in that. And I'd just encourage some consistency across all the different markets on audit trail issues.

MR. TELLEFSEN: Press the button. I had your problem, Sharon. I pressed the button and it didn't go on. I'm getting old or something.

I agree with John when he talked about the system that you guys are building and it's going to take a couple of years. Chances are that if it takes that long to build, by the time you get it ready, the requirements have changed and what you got in is going to be something that's going to

be good for two years ago, but not so good for where he is then.

Number two, an observation is something that I have from working in Chicago and New York. I agree with Pat. One of the reasons I think that identification of surveillance violations have gone down with electronic trading is because the pit used to report a lot of these things. Surveillance departments on the exchanges in Chicago and New York would come and tattle on guys on the floor and let them know that this kind of stuff is going on because they see it. Hard to see with electronic trading systems.

And electronic trading systems have been thrust upon us. All of a sudden, after so much resistance for so many years, all of a sudden it's being embraced and half the volume in Chicago is being done electronically. Who would have thought that ten years ago? I mean, you'd be thrown out of the board room in Chicago if you volunteered that that was going to be the case. It wouldn't happen.

And just as we used 135(g) as a tool to learn how to better control and surveil our marketplaces under open outcry, we're going to have to learn how to surveil

electronic trading systems with new technological tools and with some other kinds of policies and procedures, or it's going to potentially run amok.

So I think that those are--the kind of study that you've done at the Commission, Steve, I think, is very, very good. Some of the findings, I thought, were just terrific. It's right on, but how do you handle that?

Thank you.

ACTING CHAIRMAN BROWN-HRUSKA: You know, I just wanted to ask you Bryan. You know, Jerry raises a good point about developing this surveillance system or this data. When I went to your exchange, you showed me your system for surveillance and the exception reports, and we were salivating. We just thought we were so impressed with the mechanisms and the ability to generate exception reports and the like.

You know, is it feasible for us to pursue this path, to develop our own system here at the CFTC, or is there any way that we can hook into--I know this question has been asked before, but I'm going to ask it again. Is there any way for the CFTC to hook into the systems that

exist, the SRO systems, to try to keep up with the developments and move more quickly?

MR. DURKIN: Well, thank you for your compliment, by the way. You know, first of all, I don't agree that we can't have systems in place and don't have systems in place to monitor our markets. We do, and I think that we, a number of us, have been ahead of that curve. So I think, you know, nobody should be walking out of here thinking we don't know how to protect our marketplace as we deal with this evolution, because we do. But you've got to be balanced in your approach and you have to be realistic in your approach.

And so I compliment, you know, what I've heard here today, Steve, but I also worry very much about what is being suggested in terms of the requirements on the recordation of the phone lines. And so being the former regulator and head of regulation for the exchange, it's a little bit of a concern to me in terms of how far afield you might want to go with some of those recommendations.

The technology is evolving. The system that you saw continues to be embellished. We're going into our second phase of that system. We're very proud of it, and I

do think that, you know, from the Board of Trade's perspective, as we've demonstrated before, we're always open and happy to share our experiences, our knowledge, what we've been able to innovate, how we've learned along the way, but do so on a very balanced, pragmatic basis. And so, you know, from the Board of Trade's perspective, I do think the exchange would be more than happy to work with the CFTC in that regard.

MR. ROSEN: The one other thing that I would add to this mix of balancing costs and benefits is there are frequently more than one way to skin a cat, and trading ahead is something that can also be gleaned from observing patterns of executions where you have, just for an example, an FCM on one side of the market that is constantly two seconds ahead of and on the opposite side of the market from, you know, a customer--or on the same side of the market as a customer, rather. You can discern patterns of trading ahead and other abuses retrospectively, as well. And, you know, that might be a more cost-effective way of going about it.

ACTING CHAIRMAN BROWN-HRUSKA: The birthday boy, Jack Gaine.

MR. GAINE: Thank you. I'll be very brief.

Steve, thank you and your staff for a good presentation. Your initial statistics on ICC change into electronic trading--and I guess I'm a trend follower. Hypothetically, if a team is ahead eight-nothing and they hang on to win ten-seven, that's a trend, okay; it's a favorable trend.

Let me ask you what cooperation, if any, what information have you gotten from the SEC and the securities side on where they're going on electronic trading, because apropos of Yvonne's statements about cross-markets and things, I think it's important that the government act as a whole, particularly the federal financial regulators.

Have they come into the process or are they involved at all? I mean, many of the issues are similar, some are not. Some are relevant and some are not.

MR. BRAVERMAN: Yes, Jack. No, in this phase we didn't include the SEC and the equity side. We wanted to start with the futures side. We recognize that the equity side is very active in trading electronically, and has been for the last several years. So that's on our agenda and

we're certainly going to get information from them to put into the mix.

MR. GAINE: Thanks.

ACTING CHAIRMAN BROWN-HRUSKA: Professor, do you have anything to add?

MR. PIRRONG: Just one comment going back to the spoofing, is you have to be concerned about sort of the adverse impacts on incentives of people to supply liquidity to the marketplace. That sort of activity is more likely to occur when spreads are relatively wide, and if somebody puts in a spread that improves the market and then for another reason cancels it and they face some risk of being falsely accused of some sort of violation, that might temper their incentives to improve liquidity. So there can be some sort of indirect costs that can be important here as well.

ACTING CHAIRMAN BROWN-HRUSKA: Well, on that note I think I'll go ahead and shift topics, but I really appreciate your remarks, and please feel free to give us more feedback as you think on these things.

What we are going to turn to now is how exchanges deal with disruptions to market operations. Don Serpico

from the Chicago Mercantile will start out, and he will slide over here and we'll get him set up and get started.

I should also add while that is happening that I did mention that it is Jack Gaine's birthday.

Jack, 62 going on 70, right?

MR. GAINE: I can vote in the next election.

MR. SERPICO: Thank you, Sharon. For those of you don't know me, I was with the exchange for 20 years, left for 2 years and returned, very happy to return. Before I left, when somebody asked me what I did, I said I have to turn the lights on; I'm responsible to turn the lights on and make sure that when things break, we fix them. When I came back, the lights were on 24 hours a day and we make sure that now things are as seamless as can be so that you don't know that anything is broke.

So that's the lead-in for this topic, a very important topic as it relates to how secure we are with our operations, and when something does happen, how you can react, although we try to make it as seamless as possible.

So let me start. Let's see, excuse me. I'd like to handle three topics here. First of all, the response to the agenda item, but in addition to that, I'd like to get

into a little bit of risk mitigation because we're doing something in Chicago, inside the exchange and outside the exchange, that I think is a little unique, especially as it relates to an organization that we belong to that has been in existence for a year, and also some communication channels. We've got some communication channels that I think are really important as it relates to both our exchange and our industry.

So with that in mind, let me start with the environment that can cause a disruption. We're all familiar with the typical types of problems you can have with fire, flood, power, and unfortunately just recently, terrorism.

If you can remember 1992, who would have ever thought we'd have a flood that could cripple Chicago? But we had one. So from that standpoint, we had an operational disruption that was quite a unique and a very severe disruption from that standpoint. Now, we worry more about the fourth topic, unfortunately.

The infrastructure that all of us have put in place as a result of the last few years--we never had these in the past. Most of us had one operation in one building, or in our case two towers with an infrastructure. But just

most recently, within the last two, three years, we've all had to put capital in place for multiple power feeds, generators, working on a third facility in our case.

We have the ability to run in multiple sites, and have had for over two years now. With that in mind, we're building a third site that is out of the loop, but it gives us the opportunity to put another production environment in that gives us an even more fail-safe environment. So that's going on at the exchange.

I may go a little bit fast to keep us on schedule. If you need to slow me down, just raise your hand.

The CME's response as it relates to the direct topic in the given areas--the first one is open outcry. A number of you had asked, well, gee, it makes a lot of sense from an electronic trading standpoint that you could go to your backup site, you could make it as seamless as possible and you continue with your electronic trading. But the big challenge is really open outcry as it relates to transitioning futures and options to another medium.

So in our case, what we do is we've opted to go to electronic trading. Three of four years ago, that was very difficult, and with the statistic we saw today, the 2003

statistic from the CFTC, you saw at the end of 2003 about 50 percent was electronic. We've over 60 percent, moving towards 65 percent, depending upon what quadrant you're talking about. So it's becoming a little easier to take this mode.

If you had a problem in Chicago on the trading floor, a serious problem that required us to evacuate and move to the GLOBEX platform, it is made easier because there are so many products now that are on GLOBEX, many more products, in addition to that for our more complex products.

We're developing the trading, if you will, strategies that are more in tune with what is done in open outcry--the butterflies and the straddles and the strangles and the packs and the bundles. So in our Eurodollar products, what you put into GLOBEX has to be almost the same as open outcry or you have a problem going to GLOBEX.

In addition to that, the number of contracts. We've got about 60,000 contracts right now. By no means would we transfer 60,000 contracts over to GLOBEX, but we would certainly take our active contracts, both from an options and a futures standpoint.

I can remember in 1987 when we had the crash, the CBOE, the OCC, had 30,000 strikes, 30,000 contracts that they had in their system. Well, we're up to 60,000 now. I would perish to think what they have at the OCC now with all of the options that are in place. So with that in mind, you have to look at what is practical to put onto open outcry in an emergency. So we've got that in place.

We've got a hand-held on the trading floor now that has allowed people to become far more familiar with electronic trading. We call it our Galaxy product. And we also have a training program in place through our GLC, our GLOBEX Learning Center, which we put in place about a year ago that allows us to train people en masse. So we've got in this year alone 1,000 people that we've trained that can move to electronic training if they needed to. So open outcry is doable. We don't have a pit that we've opted to go to, but we certainly have this environment that we believe will work very nicely.

GLOBEX itself is fully recoverable at either site. We have that in place now, so from the standpoint of being able to process at our main site or backup site, we have

done that. The FIA test demonstrated that and you'll hear more about that later.

From a clearing standpoint, both for us and the Board of Trade, we've got the clearing system that runs at both sites. And I might add for both clearing and for GLOBEX, we've got one that runs at the backup site and one that runs in Chicago, and we alternate those. So from the standpoint of both testing, clearing runs primarily at the main and GLOBEX runs at the backup. So that's in place if we need it from an instruction standpoint.

As far as our internal processes, now, the internal processes that make up the systems, this is where things really have to be seamless. If you lose a building, everybody is going to know you lose a building and you've got to go somewhere else if you have to evacuate. But it's these internal processes, and what has really impressed me over the last two years is how distributed they have become, because just by sheer need, what you've had to do is you have had to distribute the workload, whether it be from the order entry, what we call our i-link side, our output side, our MDAPI, as we call it, and also from the standpoint of the trading engine.

You have to have a main process and a backup and backup to the backup, and they have to run automatically to the other. So from that standpoint, we have a primary to a backup. We have tools and systems that help us to do this.

And I marvel at the boxes, literally the boxes, we call them, the Unix boxes and the Linux boxes. We literally have in place hundreds and hundreds of boxes that back each other up, so that what used to be--I can tell you honestly, from turning the lights on and making sure nothing breaks, what used to be a page to me all night where you literally had to talk to somebody verbally, you've got a little page now that's all talking from an operator that is in inside a computer that is telling you that box 486 broke and 487 just took over, and that's the end of the problem.

So there's a lot of that seamlessness that we've had to put in place that you don't see that's very important from an exchange standpoint, for two reasons, number one because we've got far stiffer competition. And, number two, in our case we're now public, so you've got the investors and the analysts looking at you very closely. So you have to have it as seamless as possible, not that we didn't in

the past, but it's far more complex and you have to have these infrastructures in place.

Now, the clearing firms, and I might add that this was a big part of our FIA test. We look for three means for the clearing firms to ensure that they can back themselves up, the first of which is a backup facility. And I'm really happy and proud to report that for the industry, there were a number of you that had your backups in place so that you could talk to our backups this last Saturday.

To have you talk from your main system to our main system really was not our objective. So from that standpoint, we accomplished what we wanted to accomplish. And what you've done is you've put in place, a lot of you, the backup facilities. But if you don't have one, the second alternative comes into play, which is a third-party disaster recovery outsourcing, a Sun Guard, if you will, or an organization like that that can run it for you.

And your third alternative is a give-up arrangement. If all else fails, you can have a give-up arrangement with another firm where you can at least keep your business in place and not have to shut your doors. And I'm sure a number of you have those. So we make sure that

all three of those are in place. That's part of what we do both from an FIA standpoint and an exchange standpoint.

Now, the worst case which is highlighted on the top of this page is what happens if you lose it all, if you lose your main processing center and you lose your backup processing center. Now, a lot of that has to do with a hell of a lot more than a guy named Murphy. There's really cases where that could happen, but you have to design for it.

So in our case, we've had conversations with Bryan where we have a reciprocal arrangement we're putting together with the CBOT where literally we can exchange each other's facilities to help us to get through the day if it's a narrow problem. By narrow, I mean just one exchange. Although it's a serious problem, it's not the whole Chicago land area.

If it goes beyond that, like it did in New York, what you literally have to do is you have to look at alternatives outside the city. And in the case of what happened in New York, unfortunately, there were some exchanges that actually came to Chicago looking for some possibility of support in Chicago, if that needed to be put

in place. Fortunately, we didn't have to do that as an industry, but you have to think about those things.

And as an exchange, we have those reciprocal agreements in place so that we at least know that whether we're competitive enemies on the product base, we're not as it relates to disasters. We all have to help each other, regardless of what the product competition result is.

Now, from a staffing standpoint, I keep talking about systems and infrastructure, but your staffing is equally as important as it relates to outages. And from our standpoint, and I think the industry's standpoint, what we're modeling is something that we think is a little bit unique. Everybody does scheduled evacuation and fire drills. I know as a result of how to get out of a building, it's critical how to get out of a building. We all learn that, and we exercise those on a routine basis with the Chicago Fire Department. Those are mandatory for our office towers.

We have something that, as I said, is a little unique. We have what is called a distributive staff exit holding process in place. What I mean by that is we used to say let's send everybody over to the train station. It's

convenient, it's right across the river in Chicago. If you can get back into the building within a reasonable period of time, you go back in the building from the train station.

Well, after what happened in Spain, the last thing you want to do is put everybody in a train station. So you've got to be a little creative. So what we have is every division head at the Chicago Mercantile Exchange has a particular location that's not exactly close to the next guy's location and they go to these locations.

And on our pass that we all use to get into the facility, there's a phone number. You call that number and there's a division voice mail that keeps you up to date on what's going on with the emergency and where you should go next. If all fails--and before that, there's a new thing that is in place if all fails and you have to go home.

There's something that is put in place just this year. It's called shelter in place. Shelter in place is for the chemical problems where you have an issue where you have to keep people in the building. That's something that we're working out right now with the federal agencies, the state agencies, the city and the fire department as to how

to keep people in the building, because there's no such thing as mandatory.

When you say you have to stay in the building, you know certain people will want to get out, and obviously they have to take that risk. But that's something that we're working on right now and we're making a lot of progress on how to make that happen.

What we're doing is we're taking our critical staff and we're distributing them between Chicago and our remote site, meaning that the site that does our GLOBEX processing--we're having people work there both from a regulatory--and I add regulatory as being critical; we think that's very critical because you do have to monitor the markets in an emergency. We can't let that down. So from a regulatory standpoint, from an operations standpoint, from a GLOBEX control center standpoint so you can have a help desk, from the standpoint of IT and the clearinghouse, as well, all of these groups are working in the backup site at all times, so that if you had lost an entire site, that site could literally run with the people that you need to make it happen. So that's a big part of it.

And then you've got, unfortunately, for some that would like to be there, the non-critical staff--you can't house everybody there, so you would take your other groups, and I won't mention those, but there are other departments that are not quite as critical where you have a short-term work at home program that we put in place.

That can't last too long; it can't be too effective for too long. But what we've done is we've also looked at staff deployment to an outsourced facility in the event that we have an extended outage. So that's something that you have to consider as well, and we have.

And then, of course, you have your executive staff. I can remember during the flood, the Board of Trade had to evacuate their building and I think they used the CBOE's board room for a while. And we knew how to get a hold of that group, and they operated there for a day or two or however long that needed to be.

But you have to think about those kinds of things. They do happen, so we have again a cooperative arrangement with the Board of Trade. We have--I won't say where, but a hotel south of the Loop that we'll operate out of. And we also have that group that can move to our remote site. So

your key executives are very important, as well. Obviously, they run the company in this kind of a situation, so you get them to a safe place where they can function.

Now, risk mitigation real quick, coordinated test. I won't say much about that, other than that we were very pleased, and John is going to report on that. There was a full industry test, there was network connectivity. And we're also planning--it's called "what if" exercise. It's tabletops, in addition to this annual test that we'll have.

The Chicago futures industry--this is the one that I wanted to tell you about that is brand new for Chicago; I want to say a year old. And the rest of the United States is looking at this very closely through the Treasury Department. This is a very important step that we've taken.

We didn't initiate this. It was initiated by a few of us, and what it is is it's 16 organizations in the Chicago land area that are made up of banks and exchanges and other entities that are all part of the financial system, if you will, that have formed a group called ChicagoFIRST.

We hired a person to run this. This person has a number of different responsibilities, the biggest of which

are just noted right here. We work on ongoing fail-safe and reactive coordination with the city of Chicago. This is police, fire, transportation and water.

We have major telecommunication carriers that report in to us--the AT&Ts, the Sprints, the MCIs and the other carriers. We have all the major utilities connected into this organization, the state police and federal agencies, all the way up to Homeland Security. It's a regular forum that meets on a religious basis.

We did a tabletop exercise back in July, I want to say with a hundred people across these organizations. We simulated two terrible events through these tabletops and went through the whole exercise of how do you recover from something like that. And we found some things that we really didn't have in place that we need to put in place as a result of this very important exercise.

The Treasury Department actually paid for it and it was a two-day exercise. So that's a real important element of what we do, and that as far as the rest of--I know that Philadelphia is looking at it. I know the West Coast is looking at it. It's an easy organization to form. You just have to be religious about it.

The Financial Services Sector Coordinating Council. That's a long title. Its abbreviation is FSSCC and it's a federal organization that deals with the security industry and it has primarily been put in place to do the same kinds of things that some of the federal agencies do for the futures industry.

They are a little surprised that the futures industry has not joined this. It's a free organization to join. What they focus on is knowledge-sharing, best practices in telecommunications, electric power and IT problems, whether they be sabotage or what have you.

We joined this organization, first of all, because it's free. You can always say that there's too much information out there, but not in this area. There never can be enough information. So we joined with this organization, and we would ask that others join it as well. I'm not their spokesman, but I just want to say that it was easy for the Merc and it is very beneficial for us. It has been in place for I don't know how long. They came to visit us, and they also deal with the--I want to mention the Fed. They have a daily conference call with them.

Now, everybody knows about full business continuity plans. I won't talk about these, but there's the four Rs. Response is respond to the problem. Resumption is how to get your business up in less than three days. Recovery is recovering, getting back to your normal operation to some extent, and restoration is all the way back.

The title of my report, "Business Continuity Planning"--every exchange is treating this seriously. We all have departments to deal with this and that's a big part of making sure that the industry can be protected when we do have a problem.

Communication channels, the emergency joint operation. There are just two more topics here. One has to do with an organization called the JOC, which is a Chicago organization. It is literally a room full of people, the ones that I mentioned, all of the utilities, all of the telecommunication companies. When there is a problem in Chicago, there will be one representative from every single organization, all the way up to the federal government and Homeland Security, sitting in one room. And their

particular job is to assess the problem and give direction and literally talk about how to solve the problem.

Our responsibility is to be part of that process. We're not allowed in the room, because you can't have too many people in a room like this. It is the pulse of how to respond to a problem, but the important thing is the ChicagoFIRST representative is in there. We have our representative in there who gives us all the updates that we need if we have a chemical problem, if we have a system problem of some type that affects multiple exchanges or the banking industry or what have you.

So with that in mind, we learn about the exit strategies if you have to get out of the city, the shelter in place program specific to the problem related to what kind of chemical spill is it and do you have to close your intake valves and things like that for your building; lots of issues they deal with.

And the financial services industry's part of that is what are we doing. In other words, are we taking the step to close our exchange? They want to know that. They want to know are you evacuating, are you letting your people

go home. In some cases, they will tell us that we should let our people go home and give us the exit strategy.

So I really would like to suggest again as a--and this is what I want to be a spokesman for--this is very important in the city of Chicago. It has been in place and it works. It's a very, very good process. It's a place you know you can get to if you have a problem.

Major cooperative efforts with the city of Chicago, state of Illinois and federal agencies. We have surveillance of our financial district, including the CME, LaSalle Street, Wacker and other critical areas. We have real-time monitoring. We have surveillance cameras that are tied into us from the city standpoint, and we have alternate communications channels beyond the JOC.

One of the things we learned in our sit-down in July when we had these hundred people was we lost communication. Somebody hit your communication hub. So what do you have to do? We have to look at satellite phones. You have to look at--the worst case is pony express; you have somebody run it to wherever they got to run it.

We have in Chicago an alarm that goes off every Tuesday at 10:30 in the morning. Since I was born, they've had this alarm. One time, it went off and it made me feel good. It was when the White Sox went to the World Series in 1959. It's the last time I ever got to enjoy something related to baseball. But the bottom line is that alarm went off in 1959. The city caught a lot of heat because they turned the alarm on when the White Sox went to the World Series, but a lot of us felt good. We can use that alarm literally as a way to signal each other. So there's ways you can deal with communication. We're looking at all of them.

So this is where we're moving, and we're trying to make the industry safer. We've got the fail-safes in place. I would say the one that's the most critical is if we lose everything. If we lose everything, then we all have to bend over and you know what, or do whatever we got to do to recover.

So that's our system.

ACTING CHAIRMAN BROWN-HRUSKA: Well, thank you so much. Thank you so much for going so quickly, too. You covered a boatload of information and we do very much

appreciate it. Again, it gives us great comfort to know that we're looking ahead and we're keeping these important markets alive and working.

I'm happy to introduce Pat Gambaro, whom many of you all know, at the New York Board of Trade. He was most responsible for enabling a backup site for the New York Board of Trade when it was destroyed during the World Trade Center disaster.

So, Pat, I think all of us are very grateful to you for your hard work and your foresight, and so we're delighted to have you come today and talk about your work in the future.

MR. GAMBARO: Thank you very much.

Don, take a breath, guy.

[Laughter.]

MR. GAMBARO: I'm not going to go into any detail close to what Don has done. What I'm going to talk about the finite stuff that really happens on the floor.

The thing you have to consider first is that you have a comprehensive disaster recovery business continuity plan that covers all the disruptions. If you have it in

writing and everybody is aware of what you're doing, no problem. You can cover it.

Redundancy is the key. As Don pointed out, if you have a pyramiding effect where something is backing up something, not just the disaster recovery site, but internal to your primary site, your secondary site, you recover. And, of course, we did learn from the '93 event. That's why we survived the 9/11 event.

I'd just make a comment. As we all know, electronic trading is quite different than the organized chaos that occurs on open outcry trading floors. I put together, along with Jerry Tellefsen, a chart depicting what we believe are the various outages that could occur on our floors.

We've addressed both the very minor to the catastrophic, all of which do have implications of delay or stoppage on the floors within the daily work environment. So if you just look at the chart, I'll not go through it completely. We have only five minutes. Don took all my time.

[Laughter.]

ACTING CHAIRMAN BROWN-HRUSKA: No. Take your time.

MR. GAMBARO: The smallest thing on the floor, a time clock, in our open outcry markets can stop us for a minute or two to try and get it back. Everybody is tuned into the atomic clock. If you can't clock your orders on the floor, the CFTC is going to have a major problem. You need all the timings, which is approximately five timings on every order that comes down between when it gets to the floor, it gets to the trading area, it gets back to you, you call your customer, and so forth.

On our floor, about 90 percent of our business is non-electronic. It's done through the phone systems. We do have an electronic order routing process and we are looking at an ETS environment, but right now, on our floor, the New York Board of Trade, 90 percent phones.

We pride ourselves on the amount of business that we can do utilizing the phones and how error-free it is, and how we go home at night with one-tenth of 1 percent in outages. However, in order to get there, you have to have systems in place and the mind set in place that will keep the trading going throughout the day.

So small things like time clocks. You have to have a backup plan. Small things like the hand-held units that we use to do price reporting; if they fail, what do you do? What's the backup to it? If a display goes down in a trading pit--I'm trading coffee and I can't display the coffee prices in the trading pit, which is internal, not external. Do I keep trading?

If the markets are not displaying price discovery and sent down to the vendors because there's a sub-station failure, I mean we have a problem there. Do we keep trading, no communications to the outside world?

All these type of things have to be handled as best you can, such as with the phone system. We have a brand new phone system which we just put in based on the move that we made to the New York Mercantile Exchange a year ago September. It has multiple vendors. As Don pointed out. If AT&T fails, we can go to Sprint, we can go to Verizon, we can move on to whoever to keep the service flowing.

The problem that the exchanges have especially on the open outcry end of it is that we don't have any control on the electricity. I don't have control of what Reuters

does as far as their subsets and what not. I have no control on anything that's external to my building that is not part of my daily environment.

So we had a problem on 9/11 because of that. Even though we had built for an instantaneous type recovery process which, in fact, by eight o'clock that night on 9/11, we were up and ready to trade, the outside world couldn't communicate to us. All the T1, T3 lines that were under Building 7 were down, so nothing could come into us. All the vendors were down. We had, naturally, problems with all the phones. You couldn't communicate on the phones. So all of that will cause us to stop trading, call trading, close.

The things that we tried to look at as far as the loss of a hand-held, the loss of a display, the loss of an internal process, is to make it as redundant and pyramid as much as possible. The things that you could lose that would not interrupt your trading is our electronic order routing process. Even though it's an electronic process, this goes down to the floor. The phones are still there, so you can still get down to the floor. The loss of the clearing system. It's redundant upon redundant, so the only thing

that's going to really take us out is really catastrophic events.

We are in two separate areas; we're about ten miles apart. You might think that's not good enough. They're on different power grids, different water, different everything. It's across the river. It's easy for us to get to from the standpoint of continuance of trading. If I had my trading floor in Chicago, I'd have to move all my floor brokers, approximately 1,000 of them, to Chicago to trade, or I would have to invest in an electronic trading system, which again we're looking at.

There are so many things that happened--loss of wall boards, the loss of the displays--that occur everyday that is transparent to everyone because of the redundancies. All the little butterflies, the hiccups that happen all throughout the day just pass right through all our networks because that's all redundant. We have one site over it.

We have a triangulated effect at the New York Board of Trade. When we were at 4 World Trade Center, the primary data center was in 4 World Trade and the secondary site was in Long Island City, which is that ten-mile difference. When we lost 4 World Trade Center, it took out

the primary site. So now I only have one site. I have no backup.

What we've done now since the 9/11 disaster--I've put my primary site in a lower Manhattan area and I kept my Long Island City site. I'm running both sites. God forbid we should lose the building and have to do what you said before, that technical term you were using.

[Laughter.]

MR. GAMBARO: We won't lose the data centers. I'll have backup, unless something happens in the entire lower Manhattan area, and in that case nobody is going to be looking at trading anyway.

So we've taken all the possibilities that could happen on a small to minor event each day and made it as redundant as possible, or put some kind of manual process back in. We've tried to make everything as automated as possible outside of the open outcry environment to keep us going.

The problem with it is that something is always going to happen where you're going to have to stop trading. If I lost all the phone systems, I'd have to stop trading. If the phone company couldn't get to me, I could keep

switching over to another phone company until I ran out of phone companies.

If I lose the electric in the building, which happened to us a year ago because we had that blackout on the East Coast--we were lit. I mean, you wouldn't have known anything, except that the rest of the world was black. So we had to stop trading anyway.

Long Island City, New York Merc Building, total redundancy as far as everything is concerned, but the problem with it is if somebody can't get to you, you're still closed. And then depending upon who is the person who can't get to you, how big is that FCM who will close you down if the FCM has a problem.

The biggest concern we all have, naturally, is the terrorism. I can tell you what we've been doing at the New York Merc, first, to control the event has been phenomenal, and also to control the outside environment, you know, just based what you see on TV and you hear about what's going on.

We, too, have a major concern with New York City. We do meet with the people from the police and the FBI and all the other agencies--New York City, the mayor's office

and what not, to keep in touch. We don't have it as sophisticated as Chicago, which sounds great.

I think we ought to look into it, Sam, and see how we can develop that kind of an agency. I think that's fantastic.

But we do keep in touch with the Coast Guard, with the Army, everyone. There are helicopters flying outside our building all day long. It sounds like you're in an airport sometimes. You got sniffing dogs, special force tactical staff downstairs walking around with body armor and machine guns. It's not a pretty sight, but it's there.

In the building, we have all sorts of security. It's like going through an airport. You have to go through the x-rayed machines, have everything x-rays; the metal detectors and what not we have there. We have armed guards inside the building to protect the environment.

So the people kind of feel secure. I know a lot of them are a little hesitant, especially when you hear little things like some guy was--I was telling Sharon at lunch that we had one gentleman who sat outside our building for about three hours, four hours one day and he was taking down the schedules of the ferries coming from the other

parts of the building. I guess he wasn't smart enough to know there's a ferry schedule someplace.

[Laughter.]

MR. GAMBARO: But this guy is taking down the times the ferries are coming in. So the FBI came over and arrested him and whatever. So you have those problems. And little things like that will scare people, especially after what they went through on 9/11.

Coming and getting our staffs back from 9/11 at 4 World Trade Center back two years later wasn't exactly the easiest thing to do because of the mental state of some people, especially since we are right on the water and we do trade crude. So there are situations there. So, mentally, we have to be very careful with that type of activity.

But as far as the disruptions are concerned, I think we got it all covered. You very rarely hear of an open outcry exchange going down because a video display failed, or a phone system. Occasionally, but not often. Everything is basically covered.

But the biggest thing you have to do--and Jerry told me this one a while ago--is the luck aspect, you know. Luck is only as good as the preparation and planning that

you put into it, and I've said that time and again at all sorts of interviews and what not. It's not luck. You have to be prepared, you have to plan; disaster recover planning, business continuity planning, cover all the disruptions. You're there. Everything looks like it never happened if you have the right systems in place and the right people monitoring them.

That's it.

ACTING CHAIRMAN BROWN-HRUSKA: What I think I'll do--did you want to throw something in Brett? I'm sorry.

MR. PAULSON: Yes. My compliments to your presentations, and I echo Don's comments on ChicagoFIRST. They're doing great work.

There's been a lot of discussion about having a site to recover to several hundred miles away, and I was wondering if there's any plans in place or you've actually recovered to a site of that nature.

MR. GAMBARO: No. We have talked about it. We've talked about things like Don has talked about, which we've talked a few times about sharing a regional type process. What we wanted to do is to share our disaster recovery site

with, say, Philadelphia, or with Chicago. I know they're a lot bigger than we are, but maybe we can help.

I was really proud and pleased, and I'll tell you that Don was one of the first people who called me on 9/11, first, to see if I was okay, and, second, to tell me whatever I needed, they were there to help. There was one overseas exchange who called and said I'd be glad to list your products until you get back on your feet. Well, you know what we told him. It was another technical term.

[Laughter.]

MR. GAMBARO: So we do have things in place where we will, in fact, try and work out other activities. The biggest key for us with regard to that is the electronic trading process, where we can have something in Kansas City or in Montreal, or whatever, Bermuda, set up where we can trade and the systems will be in. We are looking very heavily at that right now, but there is the process in place.

COMMISSIONER LUKKEN: A lot of what you've talked about in your presentations has been about physical disruptions. I was wondering, as part of terrorism we hear

a lot about cyber attacks and coordinated efforts to attack electronic trading sites.

Has that been a part of disaster recovery and is that something you're proactively looking at?

MR. SERPICO: Well, I can tell you from the Merc we've got a group that focuses on that type of security and they belong to the same kind of agencies that I described from the physical standpoint. And one of our key people who just came back from one of these conferences, he came back with a whole myriad of new processes that groups can follow and the support that they can get from the agencies, because you do need some help. You need some help so that these kinds of things can be monitored more at a very high level.

And it's now starting to reach the forefront, where it wasn't before, and they're now starting to report back to the Merc, our folks, that it's starting to get a lot of attention up at the top, where it wasn't before, because everything is centered around a bomb or what have you.

But I was amazed at what they came back with. They're starting to look at some granularity that really, really focuses on how to put these firewalls in place much better than they have in the past, and that's real

encouraging. I can't say it's going to happen overnight, but at least they're focusing on it.

MR. GAMBARO: Yes, we're doing the same thing on our side. We have a security office who has three employees who just work on security, cyber security, to make sure we have everything in place for the spam and everything else that's going on, to make sure we have enough firewalls up.

And, you know, even yourself, when you sit down at your PC right now, you get the messages from Joe and Mary and Dick and Harry and everybody else. And you don't want to open them up because they're all viruses, and there's no blocking techniques unless you don't want to get any e-mail. So you have a problem.

So we are looking at and keeping in touch with--and certainly with Sam and being in the same building together and we share a lot of information. And it's a lot of work; it's a lot of apprehensive work because you don't want to shut the systems down. But you've got to be careful where you open the portals. You have to be careful who has access to your systems.

You have to make sure there's all the blocking techniques, all the firewalls, all the encryptions that are

all there, without impeding the process of the exchange. So it's very difficult, but we keep up on it. You have to.

ACTING CHAIRMAN BROWN-HRUSKA: I wonder if we might--

MR. HERSCH: I had a question.

ACTING CHAIRMAN BROWN-HRUSKA: Okay. Well, we've got a lot of questions. I was wondering if we should break and come back and pick this up, because the other topic that we're going to take up in the next session dove-tails nicely with this.

Is that okay with you, Ron?

MR. HERSCH: Yes.

ACTING CHAIRMAN BROWN-HRUSKA: And, Leo, I know you have some good points that you want to make. So hold those thoughts and we'll come back and we'll grab a cup of coffee or something to drink and we'll take a--I guess we're scheduled for a 15-minute, but we'll take about a 10-minute break and get started again.

[Recess.]

ACTING CHAIRMAN BROWN-HRUSKA: What I think we'll do is go ahead and let John do his presentation and then

we'll kind of open it up for questions and comments on this and the previous discussion topic.

John, if you're ready, take it away.

MR. DAVIDSON: Great. Thank you very much, Madam Chairman, Commissioner Lukken, ladies and gentlemen. I'd like to walk you through a presentation on the industry-wide--that is to say the Futures Industry-wide Disaster Recovery Test that was executed just this weekend. And I'm happy to say it was not a disaster. It was a quite successful test and we'll go through a little about how it works.

The notion of having an industry-wide test started at an FIA Information Technology Division meeting in April, and from that point on they held a number of meetings with exchanges, clearing organizations and firms to sort of set the scope, pick a date and establish the various parameters for the test.

They talked about what the benefits were of conducting an industry-wide test--you can really think of those benefits as setting a common denominator for understanding how prepared the industry is for some unfortunate set of events; established a common date for the

test; wanted, in particular, to test the firm, the individual clearing member-FCM backup sites of the exchanges and clearing organizations, and then to make it a realistic test; actually, a small number of orders in sort of a front-to-back manner.

This actually was the first industry-wide disaster recovery test in the United States financial services sector. I think we in the futures industry were able to do that primarily because of the longstanding good relationships between exchanges, clearing organizations and FCMs.

Of course, a lot of us do individual testing. This was the first time that a number of firms had the opportunity to test their specific backup sites to the backup sites of the exchanges. The FIA committee that was responsible for oversight for this initiative held bi-weekly, and as we got closer to the day weekly tests throughout this period of time with all of the involved parties, including a number of the vendor providers to the industry, both service providers and software providers. And then in July, August and one more time in September,

there were test briefings for FCM, exchange and clearing organization staff held both in Chicago and New York.

The specific test was held on this past Saturday, October 9th, between the hours of 8:00 and 4:30, although not everybody was up and ready to go instantaneously at eight. Participation in the test was not mandatory. It's an industry initiative. It was done on a voluntary basis, but as you'll see, participation was quite widespread. Some might argue more widespread than it would have been had it been mandatory.

[Laughter.]

MR. DAVIDSON: Each exchange developed its own test script and recruited the member firms that were important to it with respect to its own tests. The FIA has agreed not to release any firm names, and consistent with that agreement I'm not going to talk about any specifics of disaster recovery procedures at member firms, exchanges or clearing organization, just give you some general information. And then we did a number of--particularly Marianne Burns and her staff did some post-test interviews with firms and a number of surveys to get the sense of how things went.

So here's a list of who participated, and we'll talk a little bit about what each of these organizations did. Obviously, we don't have a hundred-percent universal coverage, and one thing to aim for in the future is to perhaps increase these participants somewhat.

The CBOE futures exchange tested its connectivity to CBOEdirect, its trading platform. It had some scripted trade entry for the VIX, which is its primary futures contract. That information was then transmitted to the Clearing Corporation's backup systems and the Clearing Corporation produced end-of-day files and transmitted them to the backup location of the Options Clearing Corporation, which, in fact, is several thousand miles from the primary location of the Options Clearing Corporation.

The Board of Trade tested connectivity to its eCBOT platform. It did not actually test order entry. Connectivity was confirmed by your ability to successfully log into their backup system. The CME, which provides clearing for them, generated a subset of their production reports from October 8th. Trade confirmation messages were sent from the CME clearing facility and certain reasonably

esoteric types of records were also accepted, in addition to regular trades.

The CME did test connectivity to the GLOBEX production trading system through its backup site. They did scripted order entry for a host of their important contracts across a mix of different products that they transact in. Again, they used some distributed technology for entry of some of the more esoteric information that's required. They put out SPAN files, which obviously member firms would need to use if they had to be in production for a full overnight batch cycle. And they provided file transfer facilities for trade register and other types of files.

The Clearing Corporation tested connectivity between member firms and its backup clearing system. It did not do scripted entry, but it did confirm connectivity to its systems through the log-in message. It provided certain previous business day clearing reports which are listed here, and again some of the more esoteric information in this case was not processed by the Clearing Corporation.

Eurex US Exchange did also test connectivity to their production trading platform, but again not by the entry of orders. It then utilized the facilities of the

Clearing Corporation for transmitting prior day's orders, establishing electronic connectivity to the various backup sites in the industry.

The New York Board of Trade tested connectivity to its backup trading floor, as well as to its backup electronic order routing system for getting orders to that backup trading floor. They did scripted order entry for cotton and sugar futures. They did order entry through their backup phone lines, as well as through the members' order routing systems. They forwarded phones from their primary location to their backup location, entered trades through the TIPS system, test trades and the various clearing esoteria, and produced a set of end-of-day files for member firms to receive.

The New York Mercantile Exchange tested connectivity to the eACCESS backup trading platform. They did scripted trade entry in a number of their major contracts, did reporting of fills back to firms and produced end-of-day clearing firms and some of the other important end-of-day reporting.

So that's a sort of a summary on a participant-by-participant level, 7 exchanges and designated clearing

organizations, 80 member firms, in total. You can see the breakdown here across the different exchanges or clearing organizations, how many of their participants participated. And then the far right column is the percentage of their average daily trading volume that that number of firms represents.

That's not to say that we did in the case of the CME, for example, 98 percent of a day's volume during the test. That's to say that if you took the volume of those 52 participating firms, you'd have 98 percent of the volume on that exchange represented. So when you do that aggregate across the market share, 96 percent of the U.S. trading volume was represented by the intermediaries participating in this particular test.

What were the lessons learned? And, obviously, this is the preliminary. We're four days after the test and at least one late night from a ball game. So there will be more lessons to be reviewed as time goes by, and I'm sure the IT Division will have a couple of meetings to talk about these.

In general, the test objectives were met. There are always improvements to be made for the next time an

exercise is done. We think we've identified a number of those. There was strong support within the FIA IT Division for this sort of a firm-wide disaster recovery testing.

Generally, the feedback from all of the participants was that it was a valuable and worthwhile exercise and the industry should do more common testing in the future. There's a little caveat to those conclusions at the end which I'll talk briefly about.

There were some testing design issues, as one might expect the first time through. Fundamentally, we needed more time for testing. We needed more time for preparation for testing, probably needed a more rigorous rejection rate for people that weren't ready, needed to see faster turn-around time on reports coming back, more pre-testing and set-up, more support from some of the front-end non-clearing-related vendors, more personnel in certain instances, and more coordination among the different exchange scripts, and a might fewer changes late in the process to those scripts.

As always, there were some glitches. That's why you test. If everything was going to be perfect, there would never be any need to do the tests. In different

cases, with different combinations of organizations and member firms, there were MQ, FTP and RJE. Those are all technical terms not quite of the nature previously used--

[Laughter.]

MR. DAVIDSON: --for means of electronically communicating among the various parties. And those were not all properly set up exactly correctly the first time around. There were some network router addressing issues. There were some invalid IP addresses at various places. There were some invalid or outdated passwords at backup facilities, and there were a couple of issues where the phone center response system was not as optimal as one might have liked.

In general, talking to the disaster recovery professionals in the industry--and this is all work that FIA staff has done--they felt that it was valuable in that it helped them document more of the business continuity procedures that they need to have fully documented and ready in the event of a real disaster.

It allowed them to connect to the backup sites of the exchanges and test that connectivity. It heightened their awareness about internal issues and covered in some

cases single points of failure and underscored the need for cross-training.

Now, just to put a slight damper on all of this enthusiasm that I've exhibited so far, there is somewhat of a minority view with respect to this particular exercise and it comes from the very largest participants; that is to say the large globally-integrated broker/dealers, of which Morgan Stanley is one, but by no means the only one.

In the case of a firm that is primarily in the futures business that runs their bookkeeping system on a vendor package that sits on a single or a couple of servers and that's the end of the business, this is a relatively straightforward exercise.

In the case of a large global broker/dealer that has data centers in multiple locations on multiple continents around the globe and has, because of the proliferation of futures contracts as a liquid and deep means of hedging, risk exposure, it's extraordinarily difficult to have a single part of your business do a quote, unquote, "industry-wide, full front-to-back disaster recovery drill" on a single day.

The four Rs that Don talked about--the most important of those four Rs, particularly with a drill, is getting back to your normal everyday working situation by the time the markets open in Asia; actually, by the time the markets open in Sydney.

And so in the case of the large broker/dealers, they tested connectivity from their disaster recovery sites. They did not bring their entire systems up in their disaster recovery sites and run from front to back. That's just far too risky to do for this sort of a test.

There is a question about the need for an industry-wide test as opposed to a regional test, particularly since there weren't any clearing cycles run. So you need to have everybody involved if you're actually going to match trades and simulate what goes on in the everyday running of the environment.

Whether you need to have absolutely everybody in full backup mode all at the same time--and there's an incremental benefit from that as opposed to a large regional test--is a little hard to say, I think.

One thing that's very important to this group of participants is these exchanges and clearing organizations

making multiple weekend dates available so that they can coordinate both internal and external disaster recovery tests.

So all of these firms--first of all, the notion of disaster recovery sites for firms of this scale really isn't the way they run disaster recovery. They have multiple data centers. They distribute their data processing load over those multiple data centers, and two or more of those data centers are capable of running the entire load for the entire organization in the event that one or more of those constituent data centers goes down.

So it's not like they're idle processors waiting to be utilized. There is disk-mirroring across the different data centers, but there's a huge operation involved in going fully to one of your centers away from another center that has failed.

But notwithstanding that, three or four times a year, people do that. They just don't do it all on the same day, and also assume simultaneously that all of their industry interactions go down. So having some coordinated dates, sort of one a month or something like that, would be a desirable thing leading up to another test of this type.

The number of staff required if every industry which we're in every location decided that it was going to do a single industry-wide test would be reasonably cost-prohibitive. How many industries is a giant broker/dealer in? Well, sort of count the number of trade associations by location and then multiply by four or five continents and, you know, you get a number that's a couple of hundred. That's going to use up all the available weekends that don't have other conflicts pretty quickly. So we need to do some more coordination before we decide we can take this all the way to the ultimate level, which is to simulate full front-to-back production.

But with that small caveat, I think you can reach the following conclusions. We do need to finalize these results to make sure we get back to all of the participants and understand what they learned and what they thought could be done better.

We need to get inputs into the future tests, form early a disaster recovery test steering committee and determine what we're going to do for 2005. Based on the selection criteria for the 9th of October, the sort of analogous date in 2005 looks like October 15th. So stay

tuned for the next iteration of an industry-wide test at that time.

ACTING CHAIRMAN BROWN-HRUSKA: Thank you, John.

Leo, I know you had a question before and I'm giving you the floor, giving you the first shot. Your remarks?

MR. MELAMED: Well, actually not a question, but first I want to compliment John and the FIA IT Division for spearheading and conducting this industry-wide test. It's a first, and obviously we all can be very pleased with the results. And it really is a most responsible thing to do for our industry and we've done it among ourselves, as it were, and that, too, is to be applauded because I think it's the finest example of the kind of responsibility that the industry feels it has in this area.

It's a brand new area. It all came upon us rather quickly on 9/11, but since 9/11 I'm very proud of the futures industry reactions and what each exchange has done and how each exchange has taken these things seriously. And as I say, most of it is private sector initiatives. So that, too, is very, very encouraging; this one, in

particular. So all the plaudits for John and the team of people that were involved in this.

A corollary to all of that was actually the subject I wanted to bring up, and I don't have an answer and I don't even know if it belongs with the CFTC, per se. But, certainly, this is the kind of forum that perhaps we can bring it up and then decide how you might want to go about it.

And the best way I can explain it is to tell you that on 9/11, when that occurred, because of the shock nature of the event, we all reacted differently than we will, God forbid, it happens, or a similar event happens again. That experience has given us so much knowledge and the things we've done in between have made us much more prepared.

But at that point in time, there was an immediate conversation by telephone between the New York Stock Exchange, in the presence of Dick Grasso, and some of us officials both at the Chicago Mercantile Exchange and the Chicago Board of Trade who were on that conference call. I don't recall whether NYMEX had a representative on that call. Probably, it did, but I'm not sure.

And the subject was a request from Dick Grasso primarily that the exchanges, the other exchanges not open until the New York Stock Exchange is ready to be in business again, and he wasn't sure when that would be. We discussed it at great length because the ramifications of that decision, you can all understand, are enormous. There are both pluses and minuses in that decision. It's anything but simple.

The competitive consideration was actually not even undertaken. That was not the consideration that was at all involved. What was involved is the consideration of positions of customers, how they can react to a closed market where they can't do anything, or whether it's better to have some markets open so that they can act and do something versus a blanket closing which would, in fact, assist in many ways some other issues involved. Very complex.

The ultimate decision at that time, and mainly because of the shock, I must say, because all of us were so--you know, it never happened, never considered, never thought perhaps possible, and here was the request by what is viewed as the major market in the United States,

certainly, in securities, in the world perhaps, was asking that we all hold still, and we all agreed. And you all know that ultimately the markets opened sort of together, eventually, for better or for worse.

That issue is probably a private sector issue. I don't know, but I do know it has not been discussed, as far as I know, since then in terms of what happens when it happens again, if it does. There are, of course, all kinds of subsets to that issue. Does the securities market act separately to the derivatives/futures markets? Are we all in the same boat, so to speak? Would NASDAQ keep going if the New York Stock Exchange can't?

In many cases, some of these answers are already answered. For instance, we have an arrangement--the CME has an arrangement with the Board of Trade. Like Don Serpico provided, we can exchange our needs and continue going. So in some areas, that could be the answer.

But what I am asking is if there is a national disaster that affects one major market like, say, the New York Stock Exchange, or say securities generally, or say derivatives generally, is this an issue that shouldn't be brought somewhere on the table for discussion? I don't know

what the answer is and I don't know that we'll ever come to an answer, but discussion is healthy anyway.

ACTING CHAIRMAN BROWN-HRUSKA: Thank you. I would just say I could give you my impressions based on--and, Sam, I'm glad you're raising your hand because when the blackout occurred, I know that, you know, we were very involved here at the CFTC interacting with the administration, with the White House and the Treasury, to make sure that markets were able to perform and send that vital price discovery information, and that in some sense there was at least my sense--again, this is not--this is my sense, and also somewhat my opinion, so I'm not speaking on behalf of anyone here or elsewhere.

But it seemed to me that it's better to have markets open and running rather than--to the extent that they're linked, I know that there are some concerns there, especially with the information flows. But sometimes, where some markets are disabled, other markets can pick up the slack and continue that important price discovery and that important trading activity.

Sam, I don't know what your comments were going to be, but I know you were involved in that blackout and you

all did some good things and found out some weaknesses, as well.

MR. GAER: Absolutely. First, to address some of the comments from Leo, I mean he's, as usual, spot-on. But the representative from NYMEX on that phone call was Vinnie Viola, if you remember.

MR. MELAMED: I do remember.

MR. GAER: He is our ex-chairman, as many of you know.

And most recently, I was at a--as I mentioned to you before in passing, I was at a House Financial Services hearing where I sat with Bob Ritz, who's the President and COO, I think is his title, at the New York Stock Exchange. And it was very interesting, in that both the New York Stock Exchange and NASDAQ--and I think this actually goes more to the competitive nature that was really not at issue last time, but I think, you know, now it is. Both NASDAQ and the New York Stock Exchange are prepared and have made modifications to their systems to list each other's products, should another event occur.

But I think the most interesting part of what Leo just said is, well, how does this whole market start-up get

coordinated, because you have CFTC overseeing the futures/derivatives side of the marketplace and the SEC overseeing the securities end of it? And is there a plan for the twain to meet, or is it going to be more kind of at a high-level decision, you know, policymaking effort?

COMMISSIONER LUKKEN: If I could just chime in on that, we do have Bob Wasserman sitting behind you. We have FBIIC in place, which is the coordinated efforts of all the financial regulators to talk during disasters. I think it's more on an operational level versus big policy issues that you talk about, Leo.

But the President's working group, I think, was made for just that type of a decision. Even though we might have, as Sharon points out rightfully, an obligation according to the statute to have price discovery mechanisms in place, there may be an overriding public policy reason not to open our markets. And I think it would have to be a coordinated effort between the Treasury Department, the White House, the Fed, the SEC and the other financial services, in close coordination with the industry, about what to do in that type of a situation.

You're exactly right. It's unique, but I think what 9/11 has taught us is how to keep those lines of communication open, and certainly the PWG was meant for that type of a situation.

ACTING CHAIRMAN BROWN-HRUSKA: Pat.

MR. GAMBARO: The problem that you have is some of us aren't electronic. The New York Stock Exchange is not electronic; from an order routing standpoint, yes, but they don't have an electronic ETS process.

MR. GAER: Well, they're actually moving in that direction.

MR. GAMBARO: Well, I know they're moving there, but they're not there. So I don't know how they can swap with NASDAQ.

But the other problem that remains is you have to understand what the situation is. I mean, 9/11 was unique, and where are the phones, where is the electric, what about the staffs? I mean, who is what?

It's very easy to move a product to another market, but then you have the opinions of the FCM community, the brokerage concerns, as far as where you're going to trade that. Are they hooked up? Are they ready to go?

There are so many relationships that really have to be solidified in order to do the whole process as far as, okay, if "x" happens, we all shut down for a day and then we reopen.

It's not that simple. I mean, it wasn't that simple on 9/11. I don't believe any situation is going to be that simple. You have to look at the situation, you have to assess it, you have to see what's right. Certainly, all markets should be open as quickly as possible. Maybe we delayed too many days. Instead of opening up on Monday, maybe we should have opened up on Friday.

I know you guys were ready to go at the Merc and you traded, didn't you, on Thursday and Friday?

MR. GAER: Yes, we actually opened up on the 14th.

MR. GAMBARO: So that was terrific, and I think that if we had a market such as an ETS process, I think we would have opened as well. But it's not as simple to say it's this, that or this; you know, here's the potpourri, this is the menu, select one and this is what we're doing. You can't do it that way. It requires the phone calls, it requires the public, it requires the CFTC and the government to know what's going on.

I mean, you can certainly address it. I think Leo's point is very well taken. Let's address it and get a best practices document out, like we spent two-and-a-half years doing in ETS for the NFA. And nothing can be as simple as what happened on 9/11, or God forbid, something worse than that.

ACTING CHAIRMAN BROWN-HRUSKA: Wayne Gable, I know you're with Koch Industries. What's your view from an end user perspective? I mean, I know that, you know, you--when trading shut down, how does that affect your perspective and how you go forward?

MR. GABLE: Boy, I mean I don't have detailed knowledge of what we did on 9/11. In fact, Ken, you may know more. You've, I know, worked with our guys more than I have, so that's probably one I would throw to Ken.

MR. RAISLER: I mean, I think the bias of most end users, and Koch would be no exception, is along the lines of what you said, Sharon, which is keep markets open. I think that opportunities for liquidity at times of stress are even greater than they are in normal times.

But I think the situation at, you know, 9/11 obviously--you know, we've gone over this before, but

obviously from the perspective of companies like Koch that trade the physical markets, the work of NYBOT and NYMEX in getting their market back up and going was obviously very critical and deserving of broad-based applause and credit.

So I think that obviously we would expect that, you know, if something like this were to happen again, we'd be even more able to move more quickly, although certainly even a completely unexpected even was responded to in a very efficient way. So I think broad praise is appropriate.

MR. DAVIDSON: You know, at the risk of sounding a little like Senator Kerry, this is an appropriate topic for a multilateral conference. No matter how good you are at making decisions on the fly, you need to have considered all the different ramifications in advance and thought them out.

It doesn't have to be the sort of catastrophic national tragedy that 9/11 was, which might lead you to a different set of conclusions. It can be a lot of snow, right. So if you accept this notion that New York is the center of a financial universe, should a huge snow storm that shuts down New York impact the operation of the financial markets?

Well, those people that have chosen to operate their markets in such a way that people have to ride their sleds into the exchange hall in order to transact have made a set of choices which I don't think necessarily should set public policy all by themselves.

What are the connections? If you say, well, if the stock exchange is closed, you should reasonably stop trading the options that are related to those stocks that are closed, that's one level of connectivity. What does that say for indexed futures? What does that say for interest rate products? I don't think those necessarily have to be linked, but until you go through those in a couple of scenarios in an organized give-and-take fashion, you're not really going to have the right mix of information to make that decision when the chips are down.

MR. HERSCH: If that's an endorsement, I want equal time, by the way.

MR. DAVIDSON: Of course, it's an endorsement.

MR. HERSCH: That's okay.

ACTING CHAIRMAN BROWN-HRUSKA: Leo.

MR. MELAMED: I just want to kind of add this to my statement, in that I didn't expect that discussion to

lead to any kind of answer now. I really believe, though, what John Davidson said. You can't just leave this to sort of react on the fly. I do think it can't be scripted. It probably will always have some different consequence, will create a different decision at the time.

But if you don't talk it out, if the community doesn't have an opportunity to explain itself so that everybody hears the various considerations, then it can lead to confusion. I, too, am very much in the camp as Sharon would be that as soon as possible, open the markets.

I was part of a conversation in--it was October 20th, 1987, with the White House on that very subject. There were people in the White House who wanted to close. I won't name those names. And there were those of us who didn't want to and we won out. But there are considerations of this kind that should be discussed and it should be a forum for it.

That's all I wanted to bring it up that it's something that deserves attention, and it's a global issue, too. Mind you, there are considerations that are competitive and we do compete globally, so that if a disaster were to happen, God forbid, in London and shut

London down, does that mean that we in Chicago would also shut down or not? And these are issues we ought to discuss. That's all I'm saying.

ACTING CHAIRMAN BROWN-HRUSKA: I agree. I mean, that's why we're having this meeting. So I would second that. I think it's very important, and I don't think we need John Kerry to give us guidance on how we conduct our conferences.

So, Patrick, did you have something you wanted to say?

MR. GAMBARO: Yes. I know how difficult it was to get the testing done, and John did a great job presenting the findings. And Leo is right and we should be looking into a discussion of this type, a full conference, to understand what the problematic conditions are and let everybody have their say, the banking community included.

But there were a lot of people--and this was a major, major effort that took a long time to put together across basically the entire U.S., but mainly through Chicago and New York. And there were a few people that I'd like to personally thank who were involved and who manned it.

From the CFTC was Bob Wasserman, who was there giving me hell all the time.

ACTING CHAIRMAN BROWN-HRUSKA: Take a bow, Bob.

MR. GAMBARO: And he did a great job helping us out. Marianne Burns was extremely instrumental in getting this done. John Rapper, of TCG, Tellefsen Consulting, was our outside consultant who coordinated, did the minutes. He did a fantastic job.

The FIA IT Division, headed by my own Steve Bass, did one heck of a job coordinating it through--the FCMs, the clearinghouses, the exchanges all were very cooperative. There wasn't a person who said that they wouldn't help, they wouldn't want to get involved.

And John's point is well taken. It should be done more often. I think a year from now is too long. God knows what's going to happen tomorrow. But we should be looking at more testing, more interaction, which will answer maybe some of the questions that Leo might have through this whole process. But it was a great, cooperative effort from the Board of Trade and certainly from the New York Merc. I think I can speak for Sam that we thank you very much for helping us and we want to continue.

ACTING CHAIRMAN BROWN-HRUSKA: Well, we're quickly running out of time. I want to thank everyone so much for participating. I think we've all learned a lot, and I think we've also discovered some new topics that we want to take up in the future, whether it be in a multilateral conference or through this very type of forum in the advisory committee structure. I think it's a really excellent structure for us to get feedback and to deliberate and think about what the issues are.

We have a brief reception and we invite you to participate. Again, thank you very much for coming.

[Whereupon, at 4:11 p.m., the meeting of the Advisory Committee was concluded.]