WRITTEN STATEMENT
OF

LAURA S. UNGER, COMMISSIONER
U.S. SECURITIES AND EXCHANGE COMMISSION

CONCERNING THE EFFECT OF TECHNOLOGY ON THE CAPITAL MARKETS

BEFORE THE SUBCOMMITTEE ON CAPITAL MARKETS, SECURITIES, AND GOVERNMENT SPONSORED ENTERPRISES COMMITTEE ON BANKING AND FINANCIAL SERVICES

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Written Statement of Laura S. Unger
Commissioner
U.S. Securities and Exchange Commission

Concerning the Effect of Technology on the Capital Markets

Subcommittee on Capital Markets, Securities, and Government Sponsored Enterprises
Committee on Banking and Financial Services
U.S. House of Representatives
Washington, D.C. -- March 25, 1999

Chairman Baker, Ranking Member Kanjorski, and Members of the Subcommittee:

I appreciate the opportunity to appear before the Subcommittee on behalf of the U.S. Securities and Exchange Commission ("Commission") to discuss the impact of technology on the capital markets.

I. Introduction

Technology has changed the world faster than many of us could have imagined, and continues to change it at a pace that is both exciting and daunting. More and more information is available to us everyday. Nowhere can the effect of technological change be seen any clearer than in the securities markets. These markets handle trading volumes that were unimaginable a decade ago. Investors have benefited from these changes both in terms of choice and in terms of cost. Investors have access to more markets than ever before -- and they have this access more cheaply and more efficiently.

Despite changes in the way the securities business is done, however, the fundamental goals of the securities laws -- which include transparency, access, and fairness, as well as competition, efficiency, and, of course, investor protection -- remain the same. By and large, technology has made achieving these goals easier. It has also raised our expectations about what is possible.

Therefore, our challenge -- and the securities industry's challenge -- is to meet these expectations. We need to focus on how regulation can promote deep and liquid markets as well as foster investors' interests.

This testimony will briefly discuss current trends in the securities industry, how the Commission is regulating the securities markets in light of emerging technologies, and what issues we see for the future.

II. Trends

In the U.S. markets, alternative trading systems have put a great deal of competitive pressure on traditional exchanges. This phenomenon is not limited to the United States -- there has been a shift across the globe from floor-based to screen-based exchanges.

The U.S. securities markets are responding to the challenges presented by these expanding sources of competition. For example, the New York Stock Exchange (NYSE) and the Nasdaq Stock Market make continuous technology upgrades, enabling them to routinely handle billion-share trading days. The NYSE has been successful in listing foreign companies and is now considering extending its trading hours to attract volume during the primary trading sessions of foreign markets. The National Association of Securities Dealers (NASD) acquired the American Stock Exchange, creating a "Market of Markets" that offers U.S. and foreign issuers the choice of having their shares traded on either a dealer or an auction market. In addition, both the NYSE and the NASD are exploring linkages or alliances with foreign exchanges.

The U.S. regional securities exchanges are also responding to competitive challenges by adopting new technologies and offering new products and services. For example, the Pacific

Exchange recently began operating the OptiMark System, a computerized call market that enables traders to anonymously enter profiles representing their willingness to trade at various prices and sizes. These profiles are then matched by a trade optimization algorithm.

The ability to access markets electronically also affects U.S. investors' ability to trade on foreign markets. While investors have always been able to buy and sell foreign securities, high transaction costs and relative difficulty limited this activity to a few -- generally sophisticated -- investors. Technology -- and in particular the Internet -- makes it easier for investors to cross national boundaries. Many investors are already able to view real-time quotes from foreign markets and consider foreign securities as viable alternatives for their portfolios. Electronic linkages also reduce the costs of trading directly in foreign markets, which makes it more affordable for investors who want to trade securities in those markets.

In a way, the Internet is the wild card that makes it difficult to predict what the securities market will look like five or ten years from now. By some estimates, 21 million people will have online accounts by the year 2003.[1] According to a study published in February 1999, the key economic factors that will have a large impact on the growth of electronic commerce will be ease and cost of access, convenience, and the appeal of mass customization.[2] Financial services is one of the top five categories of business-to-consumer electronic commerce today.[3]

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1 Katrina Booker, *Online Investing: It's Not Just for Geeks Anymore*, FORTUNE, Dec. 21, 1998 at 89.

2 Organization for Economic Cooperation and Development, THE ECONOMIC AND SOCIAL IMPACT OF ELECTRONIC COMMERCE: PRELIMINARY FINDINGS AND RESEARCH AGENDA, February 1999 at 42, http://www.oecd.org/subject/e_commerce/summary.htm ("OECD Report").

3 Id. at 39. The other four categories are: entertainment, travel, newspapers/magazines, and e-mail.

The Internet is dramatically transforming how individual investors participate in the market by providing them with more timely and high-quality information. In this respect, it furthers one of the most fundamental principles of securities regulation -- transparency.

Currently, about 147 million people use the Internet worldwide. Approximately 77 million of these users are in the United States. One source estimates that 21 percent of all domestic households have Internet access.[4] Predictions are that there will be 300 million users worldwide by the end of the year 2000, and 720 million by the end of 2005.[5]

The Internet has brought significant benefits to investors, in terms of cost savings and access to information. Online commissions have dropped 70 percent over the past two years from an average of $52.89 a trade to $15.75.[6] Full-service firms often charge more.[7] Retail investors are increasingly taking advantage of these low transaction fees.

The rise of Internet trading is all the more pronounced when one considers that the first online brokers did not appear until 1995; today, about 14 percent of all orders entered occur online through any one of over 100 brokers.[8] Over 30 percent of the volume in Nasdaq and NYSE stocks result from trades over the Internet.[9] However, the Internet's impact on trading by

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4 PR Newswire, Feb. 10, 1999 (reporting statistics by the Computer Industry Almanac, Inc.).

5 Id.

6 Booker, *supra* note 1.

7 *Who Needs a Broker?*, BUSINESS WEEK, Feb. 22, 1999 at 113 (stating that it would cost between $8 and $29 to buy 200 shares on-line, while the same trade would cost $116 at a full service firm). We caution, however, that investors should consider factors in addition to cost when selecting a broker, including the need for research and advice.

8 Id.

9 Theresa W. Carey, *Growing Pains*, BARRONS, March 15, 1999 at 29.

small investors is much more pronounced: nearly 37 percent of all individual investors' trades are entered online, up from 17 percent in 1997.[10]

Some noteworthy trends are emerging among online brokers and in electronic commerce that may provide insight into the issues regulators will face in the future.

A. The Internet Provides More Information to Investors.

First, information has quickly become the new coin of the realm. With the Internet, customers can collect, sort, and analyze vast amounts of data. Consumers now can use intelligent shopping agents or "bots" to instantly compare prices among different merchants or they can participate in online auctions for everything from Beanie Babies to airline tickets. One can even imagine a "bot" that would continuously scan for movements in prices of individual stocks or news about particular securities and send an alert to an individual investor.

The ability to receive information almost instantaneously has fueled an insatiable demand for it from investors. Investors also want access to real-time quote information to monitor their market positions. Some online brokers now offer research reports to compete for customers. One major off-line broker-dealer even gave away its proprietary research reports for four months to attract customers.[11]

The Internet gives investors the ability to customize the information that they receive by using "pull" technology to set the parameters of their preferences. An investor can create a

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10 Lynnley Browning, *The Rise of E-Wall St.*, THE BOSTON GLOBE, March 7, 1999 at G1.

11 Joseph Kahn, *Merrill Lynch Joins the On-Line Set; Aim is to Hold Clients Who Want Brokerless Trading and Brokers, Too,* INTERNATIONAL HERALD TRIBUNE, March 6, 1999 at 11.

customized home page and "pull" specified market information into it. The home page could include a quote tracker tracking the investor's ten favorite stocks, or set alerts to sound upon issuance of a new research report, news about a stock, or whenever the stock trades at a certain price.

B. Online Trading is Changing Competition in the Brokerage Industry

A second important trend is the convergence of discount and full-service brokers. "Discount" brokers traditionally charged lower commissions than full-service broker-dealers, offering pure trade execution without additional services. However, the Internet now makes it more cost-effective for "discount" brokers to offer services in addition to just trade execution. In other words, they are starting to look more like full-service brokers. Indeed, both types of online brokers generally offer research, market commentary, real-time and delayed quotes, interactive financial planners, and even advice.

The popularity and affordability of online discount broker-dealers have made them formidable competitors in the online world. While full-service firms add value in certain areas, many feel they must offer online trading to remain competitive. But how can they compete with the prices and services offered by discount firms? These full-service firms continue to grapple with the issue of how their online services can coexist with their offline services.

C. The Rise of New Market Intermediaries

A third trend is the rise of new intermediaries in the market. Nontraditional intermediaries, such as general web portals, more narrowly focused financial portals,[12] online

[12] *See* John Engen, *Walking a Tightrope: Intuit's High Wire Act*, FUTUREBANKER, Feb. 1999 at 38.

publishers, and chat rooms[13] are competing with market professionals for control of investors' attention. These intermediaries, both regulated and unregulated, want to become "destinations of choice" so that investors will form a relationship with them and return to their sites.[14]

III. Recent Commission Actions Involving Technology

A. Proposed Commission Rulemaking Under the Securities Act of 1933

In November, the Commission issued a release that proposes reform of the regulatory process under which companies issue securities.[15] These rule proposals are designed to modernize the regulatory offering process. The proposals, among other things, would enable companies to make greater use of electronic communications, while maintaining investor protection. Although the proposals rely in part on the exemptive authority provided to the Commission by the National Securities Markets Improvement Act of 1996 ("NSMIA"), the transaction-based regulatory structure of the Securities Act would remain intact.

Some have argued that the growing use of the Internet and other electronic media should render obsolete the SEC's role in regulating offers of securities. The Commission, however, believes that this is a reason why we should continue to regulate offers. Under the proposals, offers of securities of the largest seasoned companies would be deregulated while offers of securities of smaller companies would be deregulated only when they direct them to more sophisticated investors. As Richard Walker, the Director of our Division of Enforcement,

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[13] *See* E.S. Browning, *New Forces are Now Powering Surging Stocks*, WALL ST.J., March 15, 1999 at C1 ("Gossip from Internet chat rooms and bulletin boards threatens to become as important as analyst comments . . . .").

[14] *See The New Middlemen in the Networked Economy*, FINANCIAL TIMES MASTERING MARKETING SUPPLEMENT at 5.

[15] Securities Exchange Act Release No. 7606A (Nov. 13, 1998), 63 FR 67174.

recently testified, the Internet has provided the fraudster with quicker, cheaper access to millions of investors.[16] By regulating offers of securities, the Commission is in a better position to prevent the fraudster from stealing an investor's retirement savings or a child's education fund. If the Commission were to regulate only the sale of securities in offerings where there is greater need for regulatory supervision, it would often be too late for many investors. In effect, it would be a bit like locking the barn after the horse had been stolen.

While the Commission is concerned about Internet fraud, we continue to believe that the Internet benefits both companies and investors. Therefore, the proposals would allow companies to take greater advantage of many of the Internet's benefits when offering and selling securities. For example, the proposals would permit companies, for the first time, to use "free writing" materials during the waiting period. This would allow companies to use the Internet to broadcast their roadshows to both retail and institutional investors, to hold "chat room" discussions about their offerings, and to use electronic mail to answer investors' questions during that period of time. By permitting the use of free writing, these materials will serve as an introduction to a company's offering, and encourage investors to become more informed by reading the prospectus. Commissioner Isaac C. Hunt Jr., in a recent speech, indicated he would like free writing to transform the current ***waiting period*** into an ***education period***.[17]

Our proposals also would increase the use of the prospectus as the primary document that investors use in making their investment decisions. The Commission has made significant progress in making the prospectus a more approachable document. For example, key parts of all

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[16] *See* Testimony of Richard H. Walker, Director, Division of Enforcement, U.S. Securities and Exchange Commission, Before the Permanent Subcomm. on Investigations, Senate Comm. On Governmental Affairs (March 23, 1999).

[17] It is important to note that the use of free writing materials does not mean that issuers are free from accountability. For example, the proposals would require issuers to file all sales materials used in the offering.

prospectuses must be written in plain English. No matter how well-written, however, a prospectus that arrives after the investment decision is made provides little benefit to investors. Even with the Internet, prospectuses often arrive after investors have made their investment decisions. Our proposals would ensure that investors have prospectus information before they choose to invest their money. This is especially important for new and unseasoned companies where limited information may be available to investors.

The proposals permitting broader use of free writing could also help companies reach investors directly, without an intermediary such as an underwriter or broker-dealer.[18] For example, companies could use e-mail and hyperlinks to reach investors during the waiting period. Companies would also have greater opportunities to "test the waters" under the proposals to see whether there is sufficient investor interest in a public offering. If there is little interest, the proposals would provide a company with greater flexibility to access private markets instead. This should benefit small businesses, in particular.

B. Regulation of Alternative Trading Systems

Though, in many ways, ATSs are the functional equivalent of traditional exchanges, until recently, the Commission has regulated them as broker-dealers. One of the reasons for this was that alternative trading systems accounted for a relatively small percentage of total trading volume. Moreover, consistent with Congress' direction in the 1975 Amendments to the Exchange Act, the Commission wanted to encourage the use of technology to foster innovation and

[18] As more companies try to market their shares directly to investors, it is important to remember the benefits that underwriters provide. Underwriters have an obligation under the Securities Act to perform a due diligence investigation on a company when they help the company sell its securities. This due diligence investigation helps ensure that investors are made aware of all material information related to the offering. In many cases where a company may not be well known to the market, investors may be relying more on an underwriter's reputation than that of the offeror in deciding whether to invest in the company.

competition. Imposing traditional exchange regulation on alternative trading systems in their infancy would have stunted their development. Instead, we oversaw their activities on an *ad hoc* basis, while closely monitoring their growth through quarterly reporting.

As alternative trading systems began to proliferate and become more significant participants in the National Market System, the Commission, over a three year period, reevaluated the way that all markets are regulated. Last December, the Commission adopted a new regulatory framework for exchanges and alternative trading systems, which will take effect next month.

There are three major elements to this framework. First, the Commission adopted a new interpretation of key terms in the statutory definition of "exchange" to include alternative trading systems performing market functions. Second, we used the exemptive authority granted to us by Congress in the NSMIA to give alternative trading systems the option of registering as exchanges or registering as broker-dealers and complying with additional requirements that are tailored to their business. Finally, we made clear that the Exchange Act could accommodate the registration of for-profit exchanges.

The Commission believes that this new framework provides us with an appropriate, flexible means to regulate the securities markets as we enter the new millennium. It allows new competitors to take advantage of technological developments without being overly burdened by regulation. It assures that established competitors with significant trading volume are appropriately linked to the national market system. Finally, it enables exchanges to adopt business structures that may enhance their ability to respond to competitive challenges, both in the United States and from abroad, while still meeting their self-regulatory obligations under the Exchange Act.

C. The Potential for Greater Transparency in Bond and Options Markets

The size of the bond market dwarfs the U.S. equities market. While the NYSE does $29 billion in equities trading a day, trading in all of the bond markets adds up to twelve times that amount, or roughly $350 billion a day. The total size of the bond market is around $11 trillion. Despite its size, the bond market is far less transparent than the equities market. Technology, however, is changing this. In the government securities market, GovPX -- a 24 hour, worldwide electronic reporting system -- currently distributes real-time transaction prices for U.S. Treasury and other government securities. Last fall, the Municipal Securities Rulemaking Board started posting information about municipal securities trades between customers and dealers on a next day basis. We eventually expect to see immediate transaction reporting in the municipal securities market. In addition, in a speech last fall, Chairman Levitt called on the SROs to create systems to facilitate similar disclosure in the corporate bond market. Such disclosure has also been the topic of two hearings before the House Committee on Commerce.

Chairman Levitt has recently called for the options exchanges to bring about improvements to the options markets. In particular, the Chairman noted the need to integrate the options markets in the National Market System to ensure that the best priced orders and quotes are accessible to the broadest possible number of market participants. Enhanced market transparency measures, such as firm quotes for all market participants with quote size information, also appear possible. These improvements are now possible primarily due to technological advances.

D. Proposed Operational Capability Rules for Broker-Dealers and Transfer Agents

Because of the securities industry's increasing reliance on technology and, of course, the potential problems associated with Year 2000, on March 2, 1999, the Commission proposed new rules regarding a firm's operational capability. The proposed rules would specifically require registered broker-dealers and transfer agents to have sufficient operational capability -- taking into consideration the nature of their business -- to assure the prompt and accurate processing of securities transactions, as well as the transfer and processing of securities.[19] The proposed rules are aimed at overall capacity and mission critical systems. As a result, if customer orders are not regularly executed in a timely manner, and if the delay is due to insufficient systems capacity, a broker-dealer could be required to curtail its operations until it takes appropriate corrective action.

E. Enforcement Actions

One of the problems with the heavy flow of data on the Internet is that it is difficult to differentiate between high quality information and "noise." By lowering the barriers to entry to all comers, the Internet makes it easy to perpetrate the same old scams through a new medium. At the same time, however, use of the medium may leave "footprints" that phone calls or in-person communications do not - thereby facilitating our surveillance and enforcement efforts.

In July of 1998, the Commission created the Office of Internet Enforcement to coordinate and oversee its existing efforts related to the Internet. Among other things, the Office supervises our 125-person "cyberforce" who spend time each week surfing the Internet looking for questionable securities-related activities. As with any other area, it is difficult to quantify the

[19] Securities Exchange Act Release No. 41142 (March 5, 1999), 64 FR 1212.

amount of fraud occurring on the Internet. However, the Commission has brought 66 Internet-related cases since 1995. The Commission's first nationwide Internet fraud sweep in October 1998 resulted in 23 enforcement actions against 44 defendants. These actions mainly alleged fraudulent touting by microcap companies. As more investors do business online, we expect the increase in enforcement actions involving an Internet component to continue. The Internet cases we have brought essentially break down into three categories: offering frauds, market manipulations, and touting.

The Internet allows fraudulent misstatements to be disseminated more broadly, and quickly, and cheaply than other media. For example, it only costs $300 to buy 12 million e-mail addresses to send mass e-mails, or "spam," that hype a particular stock. It also is increasingly possible to affect markets in particular securities through anonymous chat room discussions, regardless of whether the information is accurate.[20] As one famous *New Yorker* cartoon put it, from one dog sitting at a computer terminal to another dog, "on the Internet, nobody knows that you are a dog."

IV. Implications for the Future of Regulation

While it is as difficult to predict what securities markets will look like in the future as it is to predict the long-term direction of interest rates, there are a few changes that we can already see on the horizon. First, it was only two years ago that the exchanges and the Nasdaq market moved from quoting in eighths to quoting in sixteenths. Many of the electronic communications networks today allow their participants to enter orders in even finer increments. And the markets are already preparing for decimals. While moving to decimals does not necessarily mean

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20 *See "'Winner Alert: CNET'; 'It's Gonna Fly Soon'; 'CNET Is a Monster!!!': A Stock Cooks as Chat Room Touts it, Till Word Comes to 'Take Profits Here.'"* WALL ST.J. March 18, 1999 at A1.

increments of pennies, it is likely that some markets will permit quotes and orders in those intervals for some securities.

Second, technological advances also make it possible to consider shortening the time it takes to settle a securities transaction. Before 1995, it took five days -- T+5. Now, it only takes three days -- T+3. Within a few years, that time period may well be shortened even further to one day. Straight through processing holds out the promise of T+0 -- in other words, the process from trade execution through clearance and settlement will be instantaneous. Indeed, the Swiss Market -- although much smaller than the U.S. market -- already does this. The process of further shortening the settlement cycle will not be effortless. The move from T+5 to T+3 required adjustments on everyone's part -- including the retail investor. Shortening the settlement period further will also require market participants to adapt to new patterns of doing business.

Third, technology greatly enhances access to markets. Even markets with significant floor-based trading can also be accessed electronically by their members -- and frequently by those members' customers. A fully electronic options exchange -- the International Securities Exchange -- recently filed an application for registration with the Commission. Another options exchange, the Chicago Board Options Exchange, used technology to enhance the services that it provides to retail investors. It now automatically executes retail trades at better prices that are shown on other exchanges. Because the physical location of an investor is now totally irrelevant to the trading process, alternative trading systems have also been developed by broker-dealers to perform market functions that were once the province only of exchanges.

Market professionals, rather than being made obsolete by the Internet, are arguably more important than ever. The advisory role of broker-dealers, in particular, is especially important in an Internet environment. The amount of information available to investors today through technology is overwhelming. A search on a popular search engine using the terms "stock" and "investment" yielded nearly four million webpages. How can the investor tell the difference between high-quality information and "noise?" Broker-dealers and other market professionals are there to filter out the "noise." In fact, this may become the greatest service they provide to investors. Broker-dealers are important in the capital-raising process. They conduct due diligence on issuers planning public offerings, and essentially use their own reputations to bring these issuers to market.

Market professionals also need to educate investors to ensure that they understand that sound investing should not be based on picking the flavor of the day.[21] The Commission also needs to play a role in this educational effort. Chairman Levitt recently cautioned retail investors against imitating the trading style and risks undertaken by market professionals.[22] The Commission's website at www.sec.gov also offers information that investors need to know in making a decision.

Because new communication technology makes it easy and relatively inexpensive to cross geographic borders, the Commission also needs to have an international presence. The United

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21 In February 1997, the National Association of Securities Dealers released the findings of a survey it conducted to assess investors' financial literacy. Two key findings were that:

> While 63 percent of Americans know the difference between a halfback and a quarterback, only 14 percent can tell the difference between a growth stock and an income stock.

> While 78 percent of Americans can name a character on a television sitcom, only 12 percent know the difference between a "load" and a "no-load" fund.

NASD, *NASD Launches Major Public Disclosure, Investor Education Initiative*, Press Release (Feb. 19, 1997).

22 Statement by Chairman Arthur Levitt Concerning On-Line Trading, Jan. 27, 1999 at http://www.sec.gov/news/press/99-9.txt.

States currently accounts for four-fifths of global electronic commerce. This market share is expected to decline to about two-thirds in the near term.[23]

For example, to permit the use of foreign websites not aimed at U.S. investors, the Commission issued guidance for determining whether a website should be considered an "offer" or "solicitation," and thus, subject to U.S. regulation.[24] Essentially, the Commission decided not to regulate a website as a solicitation in the United States if the foreign broker-dealer or foreign exchange took reasonable steps to ensure that no securities transactions resulted with U.S. investors as a result of the Internet activities.

Based on our experience, close cooperation with foreign regulators has become increasingly important, promoting high regulatory standards and maintaining investor protection. For example, the Commission has bilateral and multilateral arrangements with foreign securities regulators to improve coordination on regulatory and enforcement matters. In addition, the Commission actively participated in preparing the Report on the Internet published by the International Organization of Securities Commissions' Technical Committee in September 1998.[25] The Internet Report provides guidance to regulators and encourages the development of complementary regulatory approaches, thereby promoting securities activities over the Internet while protecting investors. The Commission also has provided training to foreign counterparts on Internet surveillance activities.

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[23] The decline may be due in part to the fact that French and German citizens are already accustomed to online shopping through closed networks. OECD Report, *supra* note 2, at 29.

[24] Securities Act Release No. 7516 (March 23, 1998), 63 FR 14806.

[25] SECURITIES ACTIVITIES ON THE INTERNET: A REPORT OF THE TECHNICAL COMMITTEE OF THE INTERNATIONAL ORGANIZATION OF SECURITIES COMMISSIONS, September 1998, http://www.iosco.org/docs-public/1998-internet_security-document01.html

IV. Conclusion

Electronic commerce generally -- and electronic brokerage specifically-- can only succeed if people trust the medium. As one of the participants at an SEC Technology Roundtable last spring said, the Internet will fail unless we can make it a trusted medium where people can believe in confidentiality, security, privacy, and accuracy.

In addition to its aggressive enforcement program, the Commission has facilitated the development of this trust through technologically neutral regulations. We are considering the appropriate regulatory framework within which investors may take advantage of technological innovations. However, any changes must take into account our goals as securities regulators of transparency, access, and fairness, as well as competition, efficiency, and investor protection.

As securities regulators, we understand that there will be room in the future for all types of markets -- auction, dealer, floor-based, screen-based, or Internet-based. As U.S. markets are forced by competition -- both domestic and global -- to incorporate new technology, investors will benefit. Increased competition cuts transaction costs and gives investors more options for trading. Global competition can make U.S. capital markets more resilient and efficient. In the face of these changes, regulators must be creative and flexible. We look forward to meeting the challenges ahead.