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ARTICLES

THE IMPACT OF TECHNOLOGY ON THE TRADING OF SECURITIES: THE EMERGING GLOBAL MARKET AND THE IMPLICATIONS FOR REGULATION

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Computers have revolutionized the trading of securities and the stock market is currently in the midst of a dynamic transformation. It is clear that the market of the future will not resemble the markets of the past.¹

Technology has made it possible for information regarding stock prices to be sent all over the world in seconds. Presently, computers route orders and execute small trades directly from the brokerage firm's terminal to the exchange. Computers now link together various stock exchanges, a practice which is helping to create a single global market for the trading of securities. The continuing improvements in technology will make it possible to execute trades globally by electronic trading systems.

The rapid technological advances, working with other economic and political factors such as the breaking down of trade barriers in Europe in 1992, are propelling changes that will soon result

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1. "Anyone looking down from heaven at our exchange in the year 1800 would have seen coffeehouses. By the beginning of the 20th century, a trading floor could be seen. In the year 2000, the exchange will be an electronic network, connecting terminals all over the globe." Macklin, *A Primer on NASDAQ: The Market of the Future*, in THE NASDAQ HANDBOOK: THE STOCK MARKET OF TOMORROW - TODAY 32 (1987) (quoting George Hayter, Director of Information Services at the London Stock Exchange) [hereinafter NASDAQ HANDBOOK].

in a single work market for publicly traded securities. Securities regulators from various countries have begun to meet to discuss certain specific securities issues, such as cooperation in enforcement actions in cases of securities fraud, or in the harmonization of auditing and accounting standards. However, there remains a broader, more fundamental question of the ultimate regulatory approach to trading by computers which can link world equities markets.

This article explores the ways in which technology has transformed the trading of securities in the auction market and in the over-the-counter markets.² Next, the article will examine the so-called "proprietary trading systems," and review the current regulatory efforts by the Securities and Exchange Commission ("SEC"). Finally, the article will consider the problem of regulating the trading of securities in light of the movement towards internationalization and globalization of the securities markets, movements which electronic trading technology can only hasten. Examination of these issues will show the need for a single body to coordinate the present regulatory efforts, and ultimately to make and enforce regulations to oversee the trading of stock on the emerging global markets.

I. TECHNOLOGY AND THE TRADING OF SECURITIES

A. *The Dissemination of Market Information*

Modern technology has increased the speed with which financial information can be disseminated to brokers and investors today. In the nineteenth century, Baron von Reuter, the German-born founder of what is today Reuters Holding PLC, used carrier pigeons to fly stock market quotations between Brussels and Aachen, Germany.³ Technological advances such as the laying of transatlantic cables and the use of long-wave radio signals vastly improved the transmission of financial news.⁴ The present changes being effected by computer technology are not revolutionary, but rather evolutionary.

Computer terminals around the world have access to market information. In the United States, several major companies provide information regarding stock prices in the United States, including Quotron Systems, Inc, Telerate, Inc, and Reuters Holdings PLC.⁵

2. This article reports on the trading of securities and does not examine electronic systems used in the futures or options markets.

3. Marcom, *Welcome to Hauppauge, the World's Next Financial Capital*, FORBES, Oct. 30, 1989, at 145

4. *Id.* at 149; see also REUTERS HOLDINGS PLC, 1988 ANNUAL REPORT 2 (1989).

5. P. STONHAM, GLOBAL STOCK MARKET REFORMS 17 (1987). Quotron Systems, Inc. has been the leader in information services for equities for years. *Id.*

The operations at Reuters portend the future of international market information services.⁶ Reuters has a broad range of services available to dealers. It uses high-powered satellites in orbit to send information to clients around the world⁷ — “From Albania to Zambia.”⁸ Reuters provides real-time information on financial markets, as several of its competitors do.⁹ It also offers systems which display and analyze large volumes of market data from multiple sources around the world. Reuters also can present historical information which provide decision-makers and analysts with database information.¹⁰

In addition to commercial efforts, trade and quotation information from the nation's stock exchanges is reported in the Consolidated Quotation System and the Consolidated Transaction Reporting System.¹¹ The National Association of Securities Dealers

In 1960, it introduced the first electronic stock quotation system, and today has 100,000 terminals in 23 countries. *A Volatile Market: Quotron's Error on Dow adds to Jitters*, N.Y. Times, Oct. 17, 1989, § D, at 8, col. 1.

Telerate, whose majority shareholder is Dow Jones & Co., provides financial information regarding, among other products, government securities, equities, foreign exchange, futures and options. See TELERATE, PROMOTIONAL MATERIAL (1988) (available from the author) (unpaginated).

Traditionally, Reuters has dominated the international foreign exchange market, but now also provides financial information regarding equities and commodities as well. REUTERS HOLDINGS PLC, 1988 ANNUAL REPORT 8-11 (1989).

Telerate and Reuters are the leading competitors in information services as well as in the development of electronic trading systems. Miller & Winkler, *Wiring Up: Computerized Trading Starts to make Inroads at Financial Exchanges*, Wall St. J., Apr. 24, 1989, at A6, col. 1.

6. Reuters is a British-based, publicly held company. In its annual report, it states that it is the world's largest electronic publisher of world news and information. Its media services include Reuters News Services, which provides worldwide coverage for the print media; Reuter Business Report, which covers business and economic news; Visnews, which supplies daily television news materials in 84 countries; and Reuters News-Watch, which produces videotext service for use in hotels, airports, and public gatherings. REUTERS HOLDINGS PLC, 1988 ANNUAL REPORT 2 (1989). Reuters has employees in 175 offices in 81 countries. *Id.*

7. See Marcom, *supra* note 3, at 145.

8. *Id.* at 144.

9. “Real time” information is information about a trading event available immediately or soon after the event, rather than at the end of the trading day or later. D. Ruder, *Automation of Information Dissemination and Trading in U.S. Securities Markets*, at 3 (Feb. 27, 1989) (speech at the Anneberg Washington Program, 1989 Forum on Technology and Financial Markets, Washington, DC) (text available from SEC, Washington, D.C. 20549). As noted above, Telerate and Quotron are among the information services which offer subscribers “real-time” information.

10. REUTERS HOLDINGS PLC, PRODUCTS & TECHNOLOGY 2 (March 1989).

11. Ruder, *supra* note 9, at 3-7. The Consolidated Quotations System brings together quotations from the New York Stock Exchange, the American Stock Exchange, and the regional exchanges; it determines the best bids and offers (prices at which one is willing to buy or sell stock) and sends the information electronically. *Id.* at 4. The Consolidated Transaction Reporting System can

("NASD") uses an automated quotations system known as NASDAQ (National Association of Securities Dealers Automated Quotations) which offers sophisticated services to brokers and marketmakers.¹²

B. *The Trading of Securities: An Overview*

Investors trade securities on several different types of markets.¹³ In the United States, trades are executed primarily on the stock exchanges or in the over-the-counter market.¹⁴ On a traditional securities exchange, trading can take place on the exchange floor only, using an "auction" approach to trade securities.¹⁵ In contrast, the over-the-counter ("OTC") market is characterized as a "dealer" market where there is no stock exchange floor, but rather a network of dealers communicating around the United States and to foreign countries as well.¹⁶ The National Association of Securities Dealers has transformed the OTC market into a sophisticated, automated market which is currently challenging the prestige and the future viability of the stock exchanges.

The recent advent of electronic trading systems brings a new dimension to the world of securities trading. Computers have been developed which match bids and offers of stocks and then automatically execute the trade. Others systems enable investors to communicate directly with one another and permit them to negotiate a deal outside of the exchange environment and without the aid of dealers. Once the parties have reached an agreement, the elec-

successfully publish real-time information regarding trades even during periods of high volume. *Id.* at 5.

12. See *infra* notes 91-101 and accompanying text for a discussion of the NASDAQ system and its relationship with Over-the-Counter ("OTC") trading.

13. See generally N. WOLFSON, R. PHILLIPS, & T. RUSSO, REGULATION OF BROKERS, DEALERS AND SECURITIES MARKETS (1977) [hereinafter N. WOLFSON, REGULATION OF BROKERS]; and Wolfson, Rosenblum, and Russo, *The Securities Markets: An Overview*, 16 HOW. L.J. 791 (1971) [hereinafter Wolfson, *Securities Markets*].

14. The New York Stock Exchange ("NYSE") is the largest stock market in the United States with the National Association of Securities Dealers Automated Quotation System ("NASDAQ") second in volume. GENERAL ACCOUNTING OFFICE, SECURITIES TRADING: SEC ACTION NEEDED TO ADDRESS NATIONAL MARKET SYSTEM ISSUES 50 (March 1990) [hereinafter GAO: NMS REPORT]. In 1989, the NYSE had an average daily volume of some 165.5 million shares, while the NASDAQ's average daily volume was 133.1 million shares. *Id.*

15. See *infra* notes 18 to 29 and accompanying text for a discussion of the role of the auction in traditional securities exchanges; see *infra* notes 30 to 56 and accompanying text for a discussion of the role of the specialist in traditional securities exchanges; see *infra* notes 57 to 77 and accompanying text for a discussion of the increased role of computers in traditional securities exchanges.

16. See *infra* notes 78 to 113 and accompanying text for a discussion of the OTC market.

tronic trading system then executes the transaction automatically.¹⁷

C. *The Auction Market*

In an auction market, the buying and selling of stock takes place only at a central location, on the trading floor of a stock exchange.¹⁸ The New York Stock Exchange ("NYSE") is the largest and best-known example of a stock exchange in the United States, with the American Stock Exchange ("Amex") a distant second.¹⁹

Before the stock markets adopted some form of automated assistance, investors who wanted to trade exchange-listed securities would call their brokers who would then send the client's buy or sell order to the firms "floor broker" who worked at the exchange itself.²⁰ This floor broker would then take the order to the particular location on the exchange floor, known as the "trading post," where a "specialist" in that stock would execute the trade.²¹ Today, the same information can be transmitted much more quickly electronically.²²

Each different stock traded on an exchange is assigned to a specialist unit located at the trading post.²³ The specialist performs several functions, acting as a broker, a dealer, an auctioneer, and market catalyst.²⁴ As a broker, the specialist records the orders

17. See *infra* notes 126 to 139 and accompanying text for a discussion of the concept of an electronic market.

18. See Wolfson, *Securities Markets*, *supra* note 13, at 811.

19. In the late eighteenth century, twenty-four brokers met under a buttonwood tree on Wall Street, and signed the "Buttonwood Tree Agreement of 1792," to form what is known today as the New York Stock Exchange. Gordon v. New York Stock Exchange, 422 U.S. 659, 663 (1975); NEW YORK STOCK EXCHANGE, 1990 FACT BOOK 77 (1990) [hereinafter NYSE, 1990 FACT BOOK].

The Amex began as a group of outdoor brokers who made markets in securities on the curbs of the streets of New York. In 1921, the brokers moved indoors, forming the New York Curb Exchange. The name was changed to the American Stock Exchange in 1953. AMERICAN STOCK EXCHANGE, 1980 ANNUAL REPORT 5 (1981).

There are also five other regional exchanges: Boston Stock Exchange, Cincinnati Stock Exchange, the Philadelphia Stock Exchange, the Midwest Stock Exchange, and the Pacific Stock Exchange. DIVISION OF MARKET REGULATION, U.S. SECURITIES AND EXCHANGE COMMISSION, THE OCTOBER 1987 MARKET BREAK 4-42 (Feb. 1988) [hereinafter SEC, MARKET REGULATION REPORT].

20. J. SELIGMAN, *THE SEC AND THE FUTURE OF FINANCE* 5 (1985).

21. *Id.*

22. See *infra* notes 57 to 62 and accompanying text for a discussion of the NYSE's DOT system.

23. Poser, *Restructuring the Stock Markets: A Critical Look at the SEC's National Market System*, 56 N.Y.U. L. REV. 883, 889 (1981).

24. Wolfson & Russo, *The Stock Exchange Specialist: An Economic and Legal Analysis*, 1970 DUKE L.J. 707, 707-08; NEW YORK STOCK EXCHANGE, 1988 ANNUAL REPORT 17-18 (1989).

brought to him by the floor brokers in "the book"²⁵ and when orders match, the specialist executes the trade.²⁶ The specialist is the only person with access to the information regarding the outstanding bids and orders.

As a dealer, the specialist buys and sells stock for his own account. In exchange for the privilege of having sole access to the information in the book, the specialist agrees to take on the affirmative obligation to maintain a "fair and orderly market" in the stock.²⁷ In addition, the specialist agrees not to buy or sell unless such trading is necessary to maintain an orderly market.

As an auctioneer, the specialist sets the opening price and can determine when to halt trading in a security,²⁸ and as a catalyst, the specialist works to bring buyers and sellers together.²⁹

1. Critique of the Specialist

The role of the specialist in the auction market has been the subject of recurring debate.³⁰ Different generations have reviewed the institution of the specialist and made regulatory "adjustments"

25. The "book" was formerly a looseleaf notebook. See N. WOLFSON, REGULATION OF BROKERS, *supra* note 13, at 11-12. Today the book is maintained electronically. NYSE, 1990 FACT BOOK, *supra* note 19, at 4. At the end of 1989, more than 1900 shares were included on electronic books at the NYSE. *Id.* at 23.

Most of the orders which the specialist receives are either "market" orders, which are orders to buy or sell at the best available price, or "limit" orders, which are orders to buy at or below a specified price or to sell at or above a specified price. Poser, *supra* note 23, at 889.

26. Specialist charge commissions for executing the transactions.

27. 15 U.S.C. § 78k (1988); 17 C.F.R. 240.11b-1(a)(2) (1988); see NEW YORK STOCK EXCHANGE RULE 104.10 (1990) for an example of an exchange rule for the regulation of the specialist.

28. REPORT OF THE PRESIDENTIAL TASK FORCE ON MARKET MECHANISMS REPORT OF THE PRESIDENTIAL TASK FORCE ON MARKET MECHANISMS VI-5 (Jan. 1988) [hereinafter BRADY REPORT].

29. NEW YORK STOCK EXCHANGE, 1988 ANNUAL REPORT 18 (1989).

30. In 1934, Congress declined to enact legislation which would have barred specialists from trading on their own accounts and would have permitted exchanges to replace specialists with exchange employees. Fletcher-Rayburn Bill, ch. 38, 48 Stat. 74, (1934) (codified as amended in scattered sections of 15 U.S.C.), discussed in J. SELIGMAN, THE TRANSFORMATION OF WALL STREET: A HISTORY OF THE SECURITIES AND EXCHANGE COMMISSION AND MODERN CORPORATE FINANCE 86 (1982). In the following year, Twentieth Century Fund published a study of the securities markets and concluded that the specialists' services were not valuable enough to warrant giving them a preferred position in the market. THE TWENTIETH CENTURY FUND, INC., THE SECURITY MARKETS 684 (A. Bernheim & M.G. Schneider eds. 1935).

In 1963, the SEC published its study of the securities markets, which, among other things, was critical of the specialists' performance. The SEC noted that many specialists were ineffective during a serious decline in the Dow Jones Industrial Average ("DJIA") in 1962. SEC, REPORT OF SPECIAL STUDY OF SE-

along the way.³¹ Recently, market observers have revived the debate over the need for the specialist following the market crash in October 1987.³² The crash raised questions about the fundamental structure of the stock market as it presently has evolved. The performance of the exchange specialist during the 1987 crash was scrutinized by the SEC's Division of Market Regulation, the General Accounting Office and a special task force appointed by President Ronald Reagan, which came to be known as the Brady Commission.³³ In addition, the role of the specialist is challenged by the advances of automation. As computers proliferate at the stock exchanges, the specialist must defend his utility in the face of technology advances that could soon render his services unnecessary.³⁴

During the 1987 market crash, the performance of the specialists received mixed reviews. Despite the fact that many specialists performed "reasonably" during the crash,³⁵ the Division of Market Regulation concluded that the specialist systems was "strained" and that too many specialists did not perform reasonably. That is, they were selling stocks — not buying them — as the market continued to plunge.³⁶ The Division reported several instances of questionable activity by specialists and urged the NYSE to assume greater

CURITIES MARKETS OF THE SECURITIES AND EXCHANGE COMMISSION, H.R. DOC. NO. 95, 88th Cong., 1st Sess., pt. 2, at 120-21 (1963).

The observations of the specialists' performance during the October 1987 market crash, discussed *infra*, echo the same criticisms leveled against their performance some 25 years earlier.

Obviously no one person has the capital to stem a selling wave such as that of May 28 [1962], but with his central location, the specialist is in a position to cushion the public's selling by giving depth to the markets and some specialists undertook this function. Other specialists, however, confirmed their activity to providing technical price continuity and a few specialists seemed to contribute to the "pounding" down of prices by their selling.

Id.; see also, J. SELIGMAN, *supra*, at 336-341 (discussing the Special Study's report on the specialist).

31. See, e.g., Securities Exchange Act Rule 11b-1, which spelled out the specialist's obligations. The rule followed the publication of the SEC's Special Study. *Id.*

32. On October 19, 1987, the DJIA fell 508 points. See Metz, Murrar, Ricks & Garcia, *Stocks Plunge 508 Amid Panicky Selling*, Wall St. J., Oct. 20, 1987, at 1, col. 6. See generally Solomon & Dicker, *The Crash of 1987: A Legal and Public Policy Analysis*, 57 FORDHAM L. REV. 191 (1988).

33. See SEC, MARKET REGULATION REPORT, *supra* note 19, at 2-1 to 2-26; BRADY REPORT, *supra* note 28, at VI-39; GENERAL ACCOUNTING OFFICE, PRELIMINARY OBSERVATIONS ON THE OCTOBER 1987 CRASH 55 (Jan. 26, 1988) [hereinafter GAO: OCTOBER CRASH REPORT].

34. See, e.g., Fatsis, *Stock Specialists Face Scrutiny in Computerized Trading World*, Chicago Tribune, Jan. 28, 1990, (Business) at 12 (reporting that specialists are on the defensive in the face of advancing technology); McCartney, *Taking Stock of the Trader in the Computer Age: New York Stock Exchange Weighs Lesser Role of the Floor Specialist*, Washington Post, July 1, 1990, at H1 (noting that the role of the specialist has been called "out-of-date").

35. SEC, MARKET REGULATION REPORT, *supra* note 19, at 4-26.

36. *Id.* at xvii, 4-26, 4-27.

responsibility in monitoring specialists' performance.³⁷

The Brady Commission was also critical of the performance of the specialists. The Commission studied a sample of 50 major stocks,³⁸ and found that nearly one-third of the specialists were not acting to maintain an orderly market. Instead of being net purchasers of stock, these specialists were net sellers on October 19, 1987, the first day of the crash.³⁹ Further, on October 20, the specialists overreacted to the events of the preceding day and set opening prices higher than necessary, thus helping to contribute to the market's further decline.⁴⁰ The GAO similarly criticized the specialists' actions because investors had no information regarding the price of stock because of the delayed openings and trading halts.⁴¹

Following the crash, additional studies were initiated. The Office of Technology Assessment ("OTA"), an independent Congressional agency, began a comprehensive review of the securities markets.⁴² A draft of the report has been completed, although it has not yet been released. However, according to press reports, the OTA delivered a frank, blunt blow to the institution of the specialist.⁴³ In the draft report, the OTA concluded that the specialist system is "faltering in its efforts to cope with today's high volume, highly volatile, fast-paced markets," and may make the specialist "obsolete."⁴⁴ The survival of the specialist system is threatened in a marketplace characterized by institutional investors who trade large blocks of stock, where stock prices change quickly.⁴⁵ Many

37. *Id.* at 4-27 to 4-28.

38. BRADY REPORT, *supra* note 28, at V1-41. The sample included AT&T, Boeing Corp., Coca-Cola Co., Exxon Corp., General Electric, IBM, Philip Morris Companies, Inc, and USX Corp. *Id.*

39. *Id.* at 49, V1-40.

40. *Id.* at 49, V1-45.

41. GAO: OCTOBER CRASH REPORT, *supra* note 33, at 55.

42. OFFICE OF TECHNOLOGY ASSESSMENT, CONGRESS OF THE UNITED STATES, ELECTRONIC BULLS AND BEARS: U.S. SECURITIES MARKETS AND INFORMATION TECHNOLOGY 8-9 (1990) [hereinafter: OTA: U.S. SECURITIES MARKETS REPORT].

43. Wyatt, *Eye of the Hurricane: These are Tough Times for Specialists, Too*, *Barrons*, Feb. 19, 1990, at 29; Stern, *The Market is a Price, not a Place*, *FORBES*, Feb. 5, 1990, at 41; Fatsis, *supra* note 34, at 12; Eichenwald, *Market Place: Industry Attack on Market Study*, *N.Y. Times*, Jan. 19, 1990, at D6, col. 3; Salwen & Torres, *Studies Criticize Big Board's System of Market Makers*, *Wall St. J.*, Jan. 18, 1990, at C1, col. 3. *But see* Freund, *Don't Rush to Kill Off Big Board Specialists*, *Wall St. J.*, Jan. 24, 1990, at A14, col. 4.

In the final report, the OTA noted the existence of "serious strains on the specialist system" and concluded that such strains "are likely to increase." OTA: U.S. SECURITIES MARKETS REPORT, *supra* note 42, at 8-9.

44. Eichenwald, *supra* note 43, at D6, col. 3; *see also* Fatsis, *supra* note 34, at 12 ("[Specialists] are a horse-and-buggy institution in a jet-propelled world. . . Technology has made them obsolete.")

45. OTA: U.S. SECURITIES MARKETS REPORT, *supra* note 42, at 49-51; Salwen & Torres, *supra* note 43, at C1, col. 3.

institutional investors, to avoid the specialist system in New York, prefer to trade stocks on the automated London exchange.⁴⁶

Changes to or the elimination of the specialists' monopoly would pave the way for the development of a more technologically advanced market.⁴⁷ The OTA warned that technological advancement is imperative if the United States exchanges are to compete successfully in a global market.⁴⁸

In March 1990, the General Accounting Office issued a report which, among other things, reviewed the merits of certain restrictions instituted by stock exchanges which prohibit exchange member broker/dealers, such as Merrill Lynch or Morgan Stanley, from executing trades off an exchange floor.⁴⁹ These exchange rules, such as the NYSE's Rule 390, prevent the broker/dealers from competing with specialists.⁵⁰ If such restrictions were removed, the report states that specialists would be eliminated in the face of competition.⁵¹ Supporters assert that the trading restrictions should be retained to preserve auction trading in a central market, which they claim provide investors with the best price.⁵² However, critics counter that the restrictions do not result in the best price, because they effectively eliminate price competition. If broker/dealers could compete with specialists, quotes would be narrowed, to the investor's benefit.⁵³

Critics further point out that the trading restrictions act as a disincentive to the development and use of electronic trading systems. If the restrictions were lifted, broker/dealers, for example, could develop systems to execute customer orders in-house. Other systems would increase the ability of investors to trade directly with each other.⁵⁴

46. *Id.* See *infra* notes 114 to 119 and accompanying text for a discussion of the London Exchange's Securities Exchange Automated Quotation system ("SEAQ").

47. OTA: U.S. SECURITIES MARKETS REPORT, *supra* note 42, at 49-51.

48. See Stern, *supra* note 43, at 41; OTA: U.S. SECURITIES MARKETS REPORT, *supra* note 42, at 12-13; see also Salwen & Torres, *supra* note 43, at 41 (quoting an unidentified person who worked on the OTA report: "I am afraid that one morning we are going to wake up and find Tokyo trading 24 hours a day in the world's 500 biggest stocks. . . . We just aren't ready. We haven't gotten ourselves ready for the 21st century.")

49. GAO: NMS REPORT, *supra* note 14, at 5-6. As part of its follow-up work on the 1987 market crash, the GAO reviewed three areas which were included in its report: 1) exchange-imposed trading restriction; 2) the Intermarket Trading System; and 3) multiple listing of options. *Id.* at 1.

50. *Id.* at 20. Similar trading restrictions are also imposed by the Amex, the Boston Stock Exchange, the Midwest Stock Exchange, the Pacific Stock Exchange, and the Philadelphia Stock Exchange. *Id.* at 20 n. 8.

51. *Id.* at 23.

52. *Id.* at 23, 26.

53. *Id.*

54. GAO: NMS REPORT, *supra* note 14, at 27.

The GAO also quoted the former chief economist of the NYSE, Dr. William Freund, who stated that U.S. markets, without more highly automated trading systems, will find themselves at a disadvantage in international markets if foreign markets begin 24-hour trading.⁵⁵ However, the GAO predicted that investor preference, rather than the resolution of the debate over trading restrictions, may ultimately determine the fate of increased automation in the securities industry.⁵⁶

2. *The Computer and the Auction Market of Today*

Automation is modernizing the operation of today's stock exchanges. At the NYSE, for example, automation became imperative as activity and volume of trading increased.⁵⁷

The NYSE specialist does employ computers to route orders through an automated system known as Designated Order Turnabout or "DOT."⁵⁸ Established in 1976, the computerized order-routing system connects member firms directly with the trading posts on the exchange floor, bypassing the telephone clerks and eliminating the need for floor brokers to physically take orders to the post.⁵⁹ DOT has improved the trading of securities by making executions "quicker, more accurate and less expensive."⁶⁰

The NYSE has enhanced DOT since its introduction. For example, in 1980, the NYSE implemented a new application of DOT called OARS (Opening Automated Report Service), which stores pre-opening market orders, pairs buy and sell orders, and presents the imbalance to the specialist at opening.⁶¹ In addition, DOT now has features which will automatically execute a trade for a partici-

55. *Id.* at 29. "[T]he floor of the NYSE suffers from a major disadvantage in terms of international stock trading. It is difficult to extend trading hours because of the labor-intensive nature of the operation." Freund, *Electronic Trading and Linkages in International Equity Markets*, FIN. ANALYSTS J. 10, 13 (May-June 1989). For similar observations by the OTA, see *supra* the references cited in note 48.

56. GAO: NMS REPORT, *supra* note 14, at 30.

57. The introduction of computers to the NYSE came only after the "back-room" crisis of the late 1960's, where the manual system could not keep up with the volume of trading and the overwhelming amount of paperwork that it generated. See SEC, MARKET REGULATION REPORT, *supra* note 19, at 7-16; J. SELIGMAN, *supra* note 20, at 26 (explaining the "back-room" crisis).

58. For an extensive discussion of DOT, see Solomon & Dicker, *supra* note 32, at 215-19. An improved version of DOT was introduced in 1984, called "SuperDot." SuperDot can handle as many as 600 million shares per day. In 1989, it processed an average of 149,000 orders per day for a total of 187 subscribers. NYSE, 1990 FACT BOOK, *supra* note 19, at 23.

59. J. SELIGMAN, *supra* note 20, at 25-26.

60. Solomon & Dicker, *supra* note 32, at 218.

61. SEC, MARKET REGULATION REPORT, *supra* note 19, at 7-17. OARS is used for all issues. NYSE, 1990 FACT BOOK, *supra* note 19, at 23.

pant in the Intermarket Trading System⁶² when the spread between the bid and asked prices is no more than one-eighth of one point; DOT will then report the trade to the member firm.⁶³

According to press reports, the NYSE will be breaking with tradition and will be using computers for off-hours trading, starting in 1991.⁶⁴ Although the NYSE has been reluctant to alter the status quo for several reasons, including pressures from specialists to preserve their jobs, the exchange is responding to competition from the other exchanges and from overseas markets.⁶⁵

In Canada, the Toronto Stock Exchange ("TSE"), an innovative, forward-looking stock exchange, has successfully retained its original auction market "personality," while simultaneously moving ahead to electronic trading instituting the first computer-assisted trading system known as "CATS."⁶⁶ At the TSE, orders for large trades are handled in the traditional manner, with brokers

62. The Intermarket Trading System ("ITS") is an electronic communication and order routing network that links the NYSE and the Amex with the regional stock exchanges and the NASD who can then all compete for order flow in certain stocks. GAO: NMS REPORT, *supra* note 14, at 53. The system was designed to meet national market goals by encouraging competition, reducing market fragmentation, and providing customers with execution of their orders at the best price available. *Id.* at 33. In its March 1990 report, the GAO has called for review of the system by the SEC. *Id.* at 40. The GAO noted that ITS volume has steadily increased since its inception in 1978. *Id.* at 38. There has not been a comprehensive system review since 1982. *Id.* at 34.

63. *Id.* at 12-18.

64. See, e.g., Freund, *Stock Around the Clock*, Wall St. J., Apr. 14, 1989, at A14, col. 4; see also Torres & Power, *Big Board Accelerated Off-Hours Plan Due to Fear of Competition of Rivals*, Wall St. J., June 15, 1990, at C5, col. 1; McCartney, *Late Night, High-Tech Trading on Wall St.*, Wash. Post, June 15, 1990, at D1, col. 2; Norris, *Big Board Plans Trading at Night: Electronic Transactions to Begin*, N.Y. Times, June 14, 1990, at A1, col. 1.

65. For example, Reuters announced early in 1989 its plans to trade stocks and options electronically on a twenty-four hour basis through its subsidiary Instinet. *Big Board Considers Trading Electronically During Off Hours*, Wall St. J., Apr. 21, 1989, at C1, col. 4. For a discussion of Instinet, see *infra* notes 147-157 and accompanying text.

Further, the NYSE is facing competition from a joint venture for all-night trading of stocks and option by the American Stock Exchange, the Chicago Board Options Exchange, the Cincinnati Stock Exchange, and Reuters. Power & Torres, *Amex-CBOE Pact Heats After-Hours Trading Battle*, Wall St. J., June 18, 1990, at C1, col. 3; Norris, *3 Exchanges Set Plan for All-Night Trading*, N.Y. Times, June 19, 1990, at D2, col. 4. Preliminary discussions have begun to create a network of stock, options and futures. This network merges the proposed Amex-CBOE system with Reuter's Globex system for the electronic trading of futures, creating a serious challenge to the NYSE's dominance. Power, *Reality of Trading Around the Clock is Still Years Off*, Wall St. J., June 19, 1990, at C1, col.6; see also Laderman, Maremont, Miller, Riemer & Silver, *Stock Around the Clock: The NYSE Plans After-Hours Trading with Other Exchanges in Pursuit*, Business Week, July 2, 1990 at 30; *Stock Markets Plan Longer Hours*, Christian Sci. Monitor, July 3, 1990, at 7.

66. "CATS" is the acronym for the TSE's "Computer Assisted Trading System."

dealing at specified trading posts on the exchange floor.⁶⁷ "Registered trader," the TSE's "specialists," match bids and offers by an auction process.⁶⁸ Like the NYSE, the TSE uses computers to support its traditional floor trading: the Market Order System of Trading ("MOST") and the Limit Order Trading Systems ("LOTS"). The MOST system routes small orders from the brokerage houses directly to the post on the floor where the stocks are traded, in a very similar fashion to the DOT system discussed above.⁶⁹ The LOTS trading system, as the name suggests, fills limit orders and frees floor traders for the larger and more complicated trades.⁷⁰

In addition to the trading floor, the TSE also operates a separate system known as "CATS."⁷¹ Orders executed on CATS are sent directly from the offices of the member firms by way of a computer network.⁷² The TSE uses CATS for its less actively traded shares. At year-end 1989, the CATS stock-list totaled some 840 issues, representing nearly 20 percent of the total volume traded.⁷³ CATS has proven to be a very cost-effective way of trade securities.⁷⁴

CATS protects each order's priority in the auction process. The computer fills the market orders immediately at the best price available. Limit order priority is strictly governed by price and time of entry. CATS sends printed confirmations immediately to both the buyer and selling brokers, and retains a record for the clearing system.⁷⁵

CATS has demonstrated its flexibility in being able to be modified to meet the needs of other exchanges.⁷⁶ Following its imple-

67. W. NIX & S. NIX, THE DOW JONES-IRWIN GUIDE TO INTERNATIONAL SECURITIES, FUTURES, AND OPTIONS MARKETS 216 (1988).

68. Registered traders, like NYSE specialists, have an affirmative duty to maintain an orderly market. Telephone interview with Fionulla Martin, Toronto Stock Exchange (May 14, 1990).

69. See *supra* notes 57-63 and accompanying text for a discussion of the DOT automated system.

70. W. NIX & S. NIX, *supra* note 67, at 216.

71. If a stock is traded on CATS, it does not also trade on the exchange floor. An Exchange Committee reviews new listing and decides whether it will be traded on CATS or on the exchange floor. U.S. SECURITIES AND EXCHANGE COMMISSION, DIVISION OF MARKET REGULATION, AUTOMATION IN U.S. AND FOREIGN SECURITIES MARKETS 25 (Nov. 1989) [hereinafter SEC, MARKET REGULATION AUTOMATION REPORT].

72. W. NIX & S. NIX, *supra* note 67, at 217.

73. SEC, MARKET REGULATION AUTOMATION REPORT, *supra* note 71, at 25.

74. Telephone interview with Fionulla Martin, Toronto Stock Exchange (May 14, 1990). This contrasts with the millions of dollars spent each year on the physical plant and support staff of the floor of the TSE.

75. TORONTO STOCK EXCHANGE, THE COMPUTER ASSISTED TRADING SYSTEM (CATS) (loose leaf, undated) (available from the Toronto Stock Exchange)

76. CATS: THE COMPUTER ASSISTED TRADING SYSTEM, 2.4 (looseleaf, Feb. 1990) (available from the Toronto Stock Exchange)

mentation in 1977, in Toronto, CATS has been licensed to and is operating at the Paris Bourse, the Madrid Bourse, the Brussels Bourse, and four stock exchanges in Spain.⁷⁷ Thus, CATS, a computer-assisted trading system, has been adapted to several languages and can be modified to respond to the various trading rules of different countries.

D. The Over-the-Counter Market

In addition to transactions on the stock exchanges, stocks are also traded on an over-the-counter market.⁷⁸ Unlike trading on the exchange, OTC trading is not centralized in one location. The OTC market began as a "nationwide web of telephone and telegraph wires"⁷⁹ and is today best known for its technological sophistication which links dealers around the nation and is capable of linking global markets.⁸⁰

1. The Role of Market Makers in the Over-the-Counter Market

For any given stock, there can be many market makers located all over the country, which makes the OTC market very competitive.⁸¹ The market makers communicate with each other by telephone and computers, rather than face-to-face on the exchange floor.⁸²

A market maker is a dealer who holds himself out as one who is "willing to buy and sell [a] security for his own account on a regular or continuous basis."⁸³ The market makers compete with one another by quoting the prices at which they are willing to buy or sell a specified number of shares of a stock.⁸⁴ The OTC market has been characterized as a "negotiated" market, because market mak-

77. *Id.* Equities are traded through a CATS system at the stock exchanges of Madrid, Barcelona, Valencia, and Bilbao. *Id.* The TSE also sold a license to the Bolsa de Valores de Sao Paulo (BOVESPA), South American's largest stock exchange, which is expected to begin trading in April 1990. *Id.*

78. The OTC has been called a "residual" market because all transactions not executed on an exchange are said to be traded on the over-the-counter market. Poser, *supra* note 23, at 894.

79. J. SELIGMAN, *supra* note 30, at 141.

80. Naisbitt, *Preface to NASDAQ HANDBOOK*, *supra* note 1, at 1-2.

81. The average number of market makers in the OTC's most highly capitalized stock is 12. GAO: NMS REPORT, *supra* note 14, at 52. Certain stocks, such as Jaguar and Apple Computers, have as many as 50 different market makers. NEW YORK INSTITUTE OF FINANCE HOW THE STOCK MARKET WORKS 89 (J. Dalton ed. 1988) [hereinafter HOW THE STOCK MARKET WORKS]. This contrasts with the auction market, which has only one specialist assigned to make the market in a stock. For a discussion of the role of the specialist, see *supra* notes 23-26 and accompanying text.

82. J. SELIGMAN, *supra* note 20, at 18.

83. 15 U.S.C. § 78c(a)(38) (1988).

84. GAO: NMS REPORT, *supra* note 14, at 52.

ers deal directly with each other, without the intervention of a specialist.⁸⁵

Like the specialist, the performance of OTC market makers was also scrutinized following the October 1987 market crash. The market makers were criticized because they were "unable or unwilling"⁸⁶ to answer their telephones during the crash.⁸⁷ The market makers were inundated with telephone calls for several reasons. The automated execution for small orders was inoperative some time during the crash, and as a result, market makers had to use the telephones to get the small orders executed.⁸⁸ Further, some of the market makers were not willing to buy or sell large blocks of stocks, and therefore institutions and brokers had to contact several different market makers to complete the large transactions.⁸⁹ Following the crash, the NASD promptly appointed a special committee to examine the market issues raised by the events of October 1987.⁹⁰ Among other things, the committee recommended that firms should establish contingency plans to eliminate the "surprise bottlenecks" like those which arose during the crash.⁹¹

2. NASDAQ and SOES

Most OTC trading takes place in the National Association of Securities Dealers Automated Quotations ("NASDAQ") market.⁹²

85. Wolfson, *Securities Markets*, *supra* note 13, at 821.

86. SEC, MARKET REGULATION REPORT, *supra* note 19, at 9-1.

87. BRADY REPORT, *supra* note 28, at V1-51; GAO: OCTOBER CRASH REPORT, *supra* note 33, at 59. Neither the Brady Commission nor the General Accounting Office could determine if the market makers deliberately chose not to answer the phones or if they were unable to do so, given the high volumes of calls which overwhelmed the market makers, their staff, and the telephone communications lines. *Id.*

88. SEC, MARKET REGULATION REPORT, *supra* note 19, at 9-15.

89. BRADY REPORT, *supra* note 28, at V1-51.

90. NATIONAL ASSOCIATION OF SECURITIES DEALERS, REPORT OF THE SPECIAL COMMITTEE OF THE REGULATORY REVIEW TASK FORCE ON THE QUALITY OF MARKETS v (1988) [hereinafter NASD, QUALITY OF MARKETS REPORT].

91. *Id.* at 30-31. The committee recognized that it would not be practical to expect firms to maintain capacities at the level needed to process order flows as great as those during the October 1987 market crash. Nevertheless, the committee found that it was necessary for firms to prepare contingency plans. *Id.*

92. There is over-the-counter-trading in non-NASDAQ stocks. *See infra* note 95 regarding pink sheets stock. There are also "third market" transactions which involve the trading of stocks which are also listed on other national stock exchanges, such as the NYSE. Investors prefer to trade on the third market, rather than on the exchange, to avoid the higher commission charges at the exchanges. Wolfson, *Securities Markets*, *supra* note 13, at 824. *See generally* Simon & Colby, *The National Market System for Over-the-Counter Stocks*, 55 GEO. WASH. L. REV. 17 (1986).

Finally, trading can take place on the "fourth market," where investors, primarily institutional investors, choose to deal directly with each other. Wolf-

The OTC market in the United States has grown to become the world's third largest equity market, behind the New York Stock Exchange and the Tokyo Stock Exchange.⁹³ In 1988, more than 31 billion shares were traded in the NASDAQ market, which includes over 5,000 securities.⁹⁴

Prior to the institution of the NASDAQ system in 1971, market makers negotiated trades over the telephone with quotation information they received from "pink sheets." This information, published by the National Quotations Bureau, was often out of date and fragmentary.⁹⁵

The NASDAQ system is fully automated and is linked to terminals in securities firms and financial institutions.⁹⁶ NASDAQ provides an electronic communication network for market makers and brokers which offers three levels of service.

Level One is an information service primarily used by brokers; their terminals indicate the highest bids and the lowest offers available for the securities, as well as market summary data, such as market advances and declines.⁹⁷ Level One service is leased by market data vendors, such as Quotron and Reuters, to provide information to their subscribers.⁹⁸ Level Two is also used by brokers;

son, *Securities Markets*, *supra* note 13, at 825-26. Electronic systems have been developed which facilitate trading on the fourth market. *See infra* notes 139 to 190 and accompanying text for a discussion of the so-called "third and fourth markets."

93. NASDAQ, 1989 FACT BOOK 5 (1989). The OTC market in the United States is equivalent in dollar volume to the Amex, Paris, Toronto, West German, Zurich, and London markets combined. P. STONHAM, *supra* note 5, at 45.

94. NASDAQ, 1989 FACT BOOK, *supra* note 93, at 5, 38, 85.

95. Tognino, *Market-Maker Sponsorship: A Synergistic Package of Services*, in THE NASDAQ HANDBOOK, *supra* note 1, at 302. Today, the pink sheets are still used in the sale of "penny stock" — stock which is usually low priced (less than \$1 per share) and high risk. *See generally* Burns, *Over-the-Counter Market Quotations: Pink, Yellow, Green, and White Sheets — A Gray Area in the Law of Evidence*, 52 CORNELL L.Q. 262 (1967).

A new electronic system, the "OTC Bulletin Board," has been developed to distribute quotations in penny stocks. The system is designed to make it easier to trade in the stocks and to strengthen surveillance measures. Newman, *Pink Sheets Stocks Will Seek Respect with June 1 Start-up of Electronic System*, Wall St. J., May 7, 1990, at C6, col. 1. The OTC Bulletin Board is expected to increase trading in certain international stocks. Newman, *New Electronic Bulletin Board Promises to Make Trading Foreign Stocks Easier*, Wall St. J., June 11, 1990, at C6, col. 3.

96. The central computer complex for the NASDAQ uses a Sperry 1100/84 system and 16 Tandem processors, which is located in Trumbull, Connecticut. There is a duplicate back-up facility in Rockville, Maryland. Justice, *The NASDAQ: State of the Art, Growing and Global*, in THE NASDAQ HANDBOOK, *supra* note 1, at 483; Macklin, *The Primer on NASDAQ: The Market of the future*, in THE NASDAQ HANDBOOK, *supra* note 1, at 11.

97. THE NASDAQ HANDBOOK, *supra* note 1, at 532; Justice, *supra* note 96, at 484.

98. Justice, *supra* note 96, at 484.

this service not only provides all current quotations, but also identifies the market makers in all NASDAQ securities.⁹⁹ Finally, Level Three is the service used by the market makers. While the system provides current quotations and identifies all market makers for each security, market makers operating at Level Three can also enter, delete, or update quotations for securities in which they are making a market.¹⁰⁰

The NASD offers another service, its Small Order Execution System ("SOES"). Through this system, the NASD uses its computers to execute automatically orders to trade 1,000 shares or less.¹⁰¹ SOES has no difficulty accepting odd lots — orders which are less than the normal trading unit (usually 100 shares for active stocks). SOES determines the best available price throughout the NASDAQ system when the order is placed, directs the orders to the market maker indicating the best bid or offer, and executes the trade — all in less than a minute.¹⁰² SOES also reports each trade automatically for clearance purposes, compliance purposes and dissemination to the public.¹⁰³

SOES not only eliminates much of the telephoning and paperwork involved in small trades, but it also increases the volume of trading. Executing trades through SOES also relieves the volume of trading on the Level Three machines, thus permitting market makers to transact other larger trades for their customers.¹⁰⁴

Prior to the market crash of 1987, participation in SOES was voluntary;¹⁰⁵ market makers could, and did, withdraw from SOES in October, 1987 to lessen their exposure to the risks of the volatile market.¹⁰⁶ However, since then, the NASD has made participation mandatory for all market makers in NASDAQ/NMS securities.¹⁰⁷

99. THE NASDAQ HANDBOOK, *supra* note 1, at 532; Justice, *supra* note 96, at 486

100. Justice, *supra* note 96, at 532.

101. Following the October 1987 market crash, the NASD approved a series of enhancements to SOES. One of these included establishing different maximum size order limits in the NASDAQ/NMS stocks (1,000,500, and 200 shares) based upon the market characteristics of the securities. NASD, QUALITY OF MARKETS REPORT, *supra* note 90, at 8. Generally, NASDAQ/NMS securities are the more highly capitalized and highly traded securities quoted on NASDAQ. SEC, MARKET REGULATION REPORT, *supra* note 19, at 9-3. In 1988, there were over 2800 NASDAQ/NMS securities. NASDAQ, 1989 FACT BOOK, *supra* note 93, at 1.

102. Macklin, *supra* note 96, at 12.

103. Justice, *supra* note 96, at 487-88.

104. HOW THE STOCKMARKET WORKS, *supra* note 81, at 88-89.

105. BRADY REPORT, *supra* note 28, at VI-53.

106. *Id.* Some firms dropped out of SOES completely, while others withdrew from only some of the securities in which they were SOES participants. *Id.*

107. NASD, QUALITY OF MARKETS REPORT, *supra* note 90, at 8. The NASDAQ/NMS are described *supra* note 101. Participation in non-NASDAQ/NMS securities is still voluntary.

During the market crash of 1987, SOES traded a record volume of shares.¹⁰⁸ However, due to its design, SOES became inoperative whenever markets became locked or crossed.¹⁰⁹ A market is "locked" whenever the best bid and ask prices are identical,¹¹⁰ while a market is "crossed" when the best bid price is greater than the best asked price.¹¹¹ As a result of SOES becoming inoperative, trading had to be done by telephone, which exacerbated already overloaded telephone lines.¹¹² The NASD has since revised SOES, so that it will continue to operate in locked or crossed markets.¹¹³

3. NASDAQ and the International Markets

The NASDAQ system has been called the "stock market of tomorrow" because of its advantages, which include multiple market makers and the ability to adapt itself to the eventuality of automated, 24-hour global trading.¹¹⁴ NASDAQ's experience with London's International Stock Exchange ("ISE") serves as one example of the way that computers are being used to develop an integrated world market for securities.

In 1986, the Financial Services Act,¹¹⁵ commonly known as the "Big Bang," ended fixed commissions at the London Stock Exchange.¹¹⁶ It also broke down the two-tier system of "retail" bro-

108. GAO: OCTOBER CRASH REPORT, *supra* note 33, at 60. The NASD compared the volume for a typical day, October 13, 1989, where approximately 2 million shares were traded on SOES, with the volume on October 19, 1989, where approximately 7.8 million shares were traded. NASD, QUALITY OF MARKETS REPORT, *supra* note 90, at Figure 9.

109. GAO: OCTOBER CRASH REPORT, *supra* note 33, at 60.

110. *Id.* For example, the market in a particular stock is locked if one market maker bids 12 3/8 to buy that stock, while another market maker asks 12 3/8 to sell. SEC, MARKET REGULATION REPORT, *supra* note 19, at 9-6.

111. GAO: OCTOBER CRASH REPORT, *supra* note 33, at 60. The market in a particular stock is crossed if one market maker bids 12 1/2 while another market maker asks 12 3/8. SEC, MARKET REGULATION REPORT, *supra* note 19, at 9-6.

112. GAO: OCTOBER CRASH REPORT, *supra* note 33, at 60-61.

113. NASD, QUALITY OF MARKETS REPORT, *supra* note 90, at 8. SOES will execute against the market maker causing the locked or crossed market. NATIONAL ASSOCIATION OF SECURITIES DEALERS, SOES: A QUESTION & ANSWER GUIDE TO THE NEW RULES AND PROCEDURES FOR THE SMALL ORDER EXECUTION SYSTEM 7 (1988).

114. Parry, *Banks Urged to Integrate Networks: NASDAQ Called "Market of Tomorrow" at Zurich Meeting*, AMERICAN BANKER 6 (July 5, 1989).

115. Financial Services Act, 1986, ch. 60. The Financial Services Act is reprinted in 10C H. BLOOMENTHAL, INTERNATIONAL CAPITAL MARKETS AND SECURITIES REGULATION, U.K. 12-1 to U.K. 12-299 (1990).

116. Prior to the "Big Bang," brokers charged investors a fixed commission for the purchase or sale of stock. The Stock Exchange Council raised the commission rates periodically to account for inflation. There was no competition

kers and "wholesale" market makers ("jobbers").¹¹⁷ As a result of the changes, the London market was greeted with a new influx of financial firms, many of whom decided to act both as brokers and as market makers.¹¹⁸

In addition to the regulatory and procedural changes, London's "Big Bang" also brought the installation of the Stock Exchange Automated Quotations (SEAQ) system. This quotation system, patterned after the NASDAQ system, publicly displays bid and offer prices on stocks that formerly were available only inside the stock exchange.¹¹⁹

A two-year pilot program — the first transatlantic linkage — was instituted in 1986. The linkage enables the NASDAQ to receive quotations from issues traded on SEAQ, and SEAQ, in turn, would display quotations of NASDAQ issues.¹²⁰ The linkage of the two systems was designed to provide their respective members with access to the growing global equity market. The London Link has grown and now provides quotations on more than 700 securities in the two markets. British dealers who are members of the NASD can compete with their U.S. counterparts by entering bids and offers into the NASDAQ system.¹²¹

Presently, the linkage provides subscribers with quotations. At one point, it was anticipated that there would be a complete linkage

among the brokers, who relied on a comfortable, steady income. C. CHAPMAN, *HOW THE STOCK EXCHANGE WORKS* 9-12 (1986).

The British government was concerned that this practice amounted to price fixing, which was barred in other sectors of the business community. The Stock Exchange Council agreed to drop fixed commissions in exchange for government agreement to drop its suit against the exchange. *Id.* at 10.

117. Note, *International Securities — London's Dominance in the Emerging, Integrated International Markets*, 11 SUFFOLK TRANSNAT'L L.J. 421, 423 (1987). Prior to the Big Bang, the jobbers or market makers, who maintained inventories of stocks, dealt as principals and made money on the difference between buy and sell prices. They dealt with brokers only. The brokers, on the other hand, acted only as agents; they did not make markets. They conducted research and arranged deals for their client with the jobbers. Clients paid commissioners for these services. *Id.*

118. Lorie, *Economic Efficiency and NASDAQ*, in THE NASDAQ HANDBOOK, *supra* note 1, at 355.

119. Fallon, *The View from Overseas*, in THE NASDAQ HANDBOOK, *supra* note 1, at 471. Japan is also planning to institute a new securities market which is modeled after the NASDAQ system. Japan Securities Dealers Automated Quotation System ("JSDAQS") is scheduled to begin operations in 1991. NATIONAL ASSOCIATION OF SECURITIES DEALERS, (1989) ANNUAL REPORT 6 (1990) [hereinafter NASD, 1989 ANNUAL REPORT].

120. See Securities Exchange Act Release No. 23158, 51 Fed. Reg. 1589 (Apr. 21, 1986); Securities Exchange Act Release No. 24544, 52 Fed. Reg. 21781 (June 3, 1987).

121. S. Rothwell, *New International Trading Facilities and Market Linkages* (Speech, June 15, 1989 at ABA Program on Int'l Sec. Trans., New York, NY).

for execution, settlement and clearance.¹²² However, those plans may not come to fruition, as the NASD has begun to install its own computer facility in London.¹²³ The NASD's system, called "NASDAQ International," is expected to offer computer-screen trading of some 400-500 stocks and will open at 3:30 a.m. Eastern time, while the London market is open.¹²⁴

In addition to its London Link, the NASD has established a linkage with the Stock Exchange of Singapore. Singapore's SESDAQ system is an automated quotation system. Following the linkage between NASDAQ and SESDAQ in 1988, members of the Stock Exchange of Singapore now have access to closing quotes on some 35 NASDAQ issues which are traded in both markets.¹²⁵

122. NASD, HAVE YOU HEARD ABOUT NASDAQ'S LONDON BRIDGE? 1 (pamphlet, June 1988).

123. NASD, 1989 ANNUAL REPORT 14 (1990).

124. Power, *Reality of Trading Around the Clock is Still Years Off*, Wall St. J., June 19, 1990, at C1, col. 6; *Stock Around the Clock: The NYSE Plans After-Hours Trading with Other Exchanges In Pursuit*, Business Week, July 2, 1990, at 30; *Stock Markets Plan Longer Hours*, Christian. Sci. Monitor, July 3, 1990, at 7.

125. NASD, 1989 FACT BOOK, *supra* note 93, at 129.

In addition to the NASDAQ linkages, a number of other electronic linkages have been developed. The first international electronic stock trading link was established in 1984 between the Montreal Exchange and the Boston Stock Exchange. See Securities Exchange Act Release No. 21499, 49 Fed. Reg. 44,575 (Nov. 1, 1984); (Phase II) Securities Exchange Act Release No. 21925, 50 Fed. Reg. 14,480 (Apr. 8, 1985). The specialist in Montreal can send orders for execution by a specialist in Boston in a small number of dually listed issues or in the approximately 1,150 Intermarket Trading System U.S. listed securities. Mann & Mari, *Current Issues In International Securities Law Enforcement*, A.B.A. NAT'L INST. INT'L LITIGATION 7 (Feb./March 1989).

The Toronto Stock Exchange ("TSE") has established two linkages: one with the American Stock Exchange and another with the Midwest Stock Exchange. The Amex/TSE link, which began in 1985, permits orders to be routed in securities which are dually listed on the exchanges. See Securities Exchange Act Release No. 22442, 50 Fed. Reg. 39,201 (March 28, 1985). Similarly, the TSE's link with the Midwest Stock Exchange began with a small number of dually listed securities which has since grown in number. See Securities Exchange Act Release No. 23075, 51 Fed. Reg. 11,854 (Sept. 20, 1985).

However, early results of these linkages have been disappointing to the exchanges, with lower-than-expected volume of trading. Note, *The Present and Future Role of the Electronic Linkage in the Developing International Securities Markets*, 23 GEO. WASH. J. INT'L L. & ECON. 639, 658 (1989). It has been suggested that expanding the linkages to include more stocks would increase the volume and is in fact necessary to increase profitability. *Id.* at 23-24. Stock exchanges have not given up on the idea, as the Pacific Stock Exchange announced plans to establish a link with the Taiwan Stock Exchange. *Pacific Exchange Plans to Set Up Formal Link with Taiwan's Market*, Wall St. J., Aug. 24, 1990, at C17, col. 7.

E. The Electronic Trading System

1. The Concept of an Electronic Market

In the 1970s, Congress undertook a major re-examination of the U.S. securities laws. In 1975, it passed amendments to the Securities Exchange Act of 1934 which established as a Congressional goal the promotion of a "national market system" in the United States.¹²⁶ In response to this goal, Messrs. Peake, Mendelson, and Williams brought a proposal to the SEC that a national electronic trading system would be the way to achieve the national market system mandated by Congress.¹²⁷ While the SEC does not agree that it needs to require the establishment of a national, all-electronic system in order to fulfill its Congressional mandate to establish a national market system, the Commission encourages innovation in securities trading.¹²⁸

Advocates of electronic markets argue that there is no question, but that the financial markets of the future will be electronic and that the floor of the New York Stock Exchange is destined to become an historical relic.¹²⁹ According to the Peake, Mendelson & Williams proposal, an electronic exchange would involve simply "the direct linkage of all market makers and broker-dealers through a computer-controlled communication system."¹³⁰ The system would automatically execute all matching firm bids and offers.¹³¹ An electronic exchange would replace the "auditory" trading arena with a "visual" trading arena.¹³²

The advantages of electronic trading are compelling.¹³³ For ex-

126. The Securities Acts Amendments of 1975, Pub. L. No. 94-29, 89 Stat. 97, reprinted in, 1975 U.S. CODE CONG. & ADMIN. NEWS 179 (codified at 15 U.S.C. § 78k-1 (1988)).

127. Mendelson, Peake & Williams, *Towards a Modern Exchange: The Peake-Mendelson-Williams Proposal for and Electronically Assisted Auction Market*, reprinted in IMPENDING CHANGES FOR SECURITIES MARKETS: WHAT ROLE FOR THE EXCHANGES? (E. Block & R. Schwartz, eds. 1979) [hereinafter *Towards a Modern Exchange*]; see also Mendelson & Peake, *The ABCs of Trading on a National Market System*, FIN. ANALYST J. 31 (Sept./Oct. 1979) [hereinafter *The ABCs of Trading*].

128. Interview with Brandon Becker, Associate Director, Division of Market Regulation, U.S. Securities and Exchange Commission (Feb. 5, 1990).

129. See Stern, *The Market is a Price, not a Place*, FORBES, Feb. 5, 1990, at 41 ("Wall and Broad may one day become a picturesque shopping mall.") See generally Hansell, *The Wild, Wired World of Electronic Exchanges*, 23 INSTITUTIONAL INVESTOR 171 (Sept. 1989) (extensively reviewing electronic trading in financial markets); Freund, *supra* note 55, at 11-13 (focusing on issues relating to international markets).

130. *Towards a Modern Exchange*, *supra* note 127, at 55.

131. *Id.*

132. *The ABCs of Trading*, *supra* note 127, at 31.

133. Peake, *The Future of the Exchanges*, 22 INSTITUTIONAL INVESTOR, Dec. 1988, (Special Section) at 5; Welles, *Is it Time to Make the Big Board a Black Box?*, Business Week, Feb. 5, 1990, at 74.

ample, electronic systems provide access from anywhere, through a network of computer terminals.¹³⁴ They offer investors real-time display of bids, offers, and trading volume.¹³⁵ The electronic trading systems directly link other global informational systems. Electronic exchanges are cheaper to build and operate. They also make clearing and settlement easier and more reliable. Further, regulation will be more effective since transactions can be reconstructed. Most importantly, investors will have confidence that electronic markets are fair and orderly markets.¹³⁶

The primary reservations regarding electronic markets relate to the issue of liquidity. "Liquidity" has been defined as a "characteristic of a security with enough units outstanding to allow large transactions without a substantial drop in price."¹³⁷ Institutional investors prefer liquid investments so that their trades will not affect the price.¹³⁸ Before an electronic market can replace the present system of an auction-based stock exchange or the OTC's market maker system, it will have to show that it is more than a public order-matching system; it will have to demonstrate that an electronic market has adequate liquidity.¹³⁹

2. Some Definitional Distinctions: Third and Fourth Markets

In addition to the trading on the NASDAQ system and through the pink sheets (which is being supplanted by the OTC Bulletin Board), there are two other types of over-the-counter trading. "Third market" transactions are over-the-counter transactions in securities which are listed on the New York Stock Exchange or other national exchanges.¹⁴⁰ Third market firms are not members of stock exchanges and they maintain their own inventory and trade exchange-listed securities.¹⁴¹ Institutional investors and brokers invest money on third-market transactions because the stock prices and commissions are lower than those at the exchange.¹⁴²

134. See Stern, *supra* note 12941.

135. Peake, *supra* note 133, at 5.

136. *Id.*

137. J. DOWNES & J. GOODMAN, *DICTIONARY OF FINANCE AND INVESTMENT TERMS* 213 (2d ed. 1987) [hereinafter *DICTIONARY OF FINANCE*].

138. *Id.*

139. Freund, *The Future of the Exchanges*, 22 *INSTITUTIONAL INVESTOR* 4-5 (Special Section) (Dec. 1988); Freund, *supra* note 55, at 14.

140. Wolfson, *Securities Markets*, *supra* note 13, at 824.

141. See GAO: NMS REPORT, *supra* note 14, at 52. Bernard L. Madoff Investment Securities is an example of a third market maker; see Stern, *Living off the Spread*, *FORBES*, July 10, 1989, at 66.

Firms which are members of the New York Stock Exchanges, like Merrill Lynch for example, are prohibited by trading restrictions like Rule 390 from competing with the exchange specialists and therefore, they cannot execute such trades in-house.

142. Wolfson, *Securities Markets*, *supra* note 13, at 824.

Third markets firms can execute trades at a lower cost through the use of computers.¹⁴³

In the so-called "fourth market," investors trade directly with each other.¹⁴⁴ Today, institutional investors can use proprietary trading systems to execute trades directly, without the intervention of any market makers or exchange specialists.

3. Proprietary Trading Systems

In the years following the legislation calling for a national market system, the exchanges and the NASD over-the-counter market modernized their facilities.¹⁴⁵ Yet, it has been observed that the efforts by the exchanges have not succeeded in eliminating inefficiencies, especially when compared with the advantages of the fully electronic market.¹⁴⁶

As the exchanges were introducing automation, other innovations were coming to fruition during this period. Private automated networks were being developed that would operate outside of the traditional markets.¹⁴⁷ These private systems, known as proprietary trading systems, provide real-time market information as well as trading capabilities for customers, who today are primarily institutional investors.¹⁴⁸ Trades are executed electronically on independent networks outside of the traditional securities markets.

The oldest and best known of these systems in the United States is Instinet Corporation,¹⁴⁹ a subsidiary of Reuters Holdings PLC.¹⁵⁰ The Instinet system began operations in 1969 as an information network and has since developed sophisticated automated execution functions.¹⁵¹ Today, it is a network of computer terminals through which institutions, broker-dealers and exchange specialists can execute trades electronically.¹⁵² As of June 1989, the

143. Stern, *supra* note 129, at 67.

144. Wolfson, *Securities Markets*, *supra* note 13, at 826.

145. See *supra* notes 57 to 125 and accompanying text for a discussion of the modernization of the exchange and the OTC markets.

146. See Welles, *supra* note 133, at 74. Junius Peake is quoted as observing the exchange's use of automation, "It's like using the power of the computer to move a slide rule." *Id.*

147. D. Ruder, *supra* note 9, at 2-3.

148. GAO: NMS REPORT, *supra* note 14, at 52.

149. Instinet is an acronym for Institutional Networks Corporation. DICTIONARY OF FINANCE, *supra* note 137, at 147.

150. See *supra* notes 5 to 10 and accompanying text for a discussion of Reuters Holding PLC.

151. Ruder, *supra* note 9, at app. 23.

152. SEC, MARKET REGULATION AUTOMATION REPORT, *supra* note 71, at 17. According to its promotional materials, Instinet describes itself as a "real time, neutral, interactive, transactional, intermarket system for monitoring market information and executing trades." INSTINET, FACT SHEET (loose leaf, undated) (available at INSTINET Corp., 757 Third Ave., New York, NY 10017). See *gen-*

Instinet system was connected with over 200 broker-dealers, market makers and specialists and with more than 150 financial institutions.¹⁵³ It provides traders with access to exchange-listed securities, OTC-traded securities, and under a pilot program which began in July 1989, to U.K. equities.¹⁵⁴ In 1984, Instinet transactions represented only .76% of U.S. share volume; by 1988, its share had risen to 2.84%.¹⁵⁵

Customers of Instinet enter bids and offers which are seen by other users. Instinet shows *all* of the outstanding buy and sell orders as well as indications of interest¹⁵⁶ in the security, unlike the traditional auction market. The customer also has market data on the screen, including the Dow Jones Industrial Average and the New York Stock Exchange volume. Customers can negotiate anonymously with one another before the trade is executed.¹⁵⁷ The customer, not the system, directs the execution.

In addition to Instinet, other types of proprietary trading systems are in use. For example, the Portfolio System for Institutional Trading ("POSIT") began operations in 1987, and is used by institutional investors to facilitate the trading of stock portfolios.¹⁵⁸ POSIT, sponsored by Jefferies & Co. ("Jefco"), is an electronic system which matches a customer's order against orders already in the system. The system executes the order as matched; however, a Jefco registered representative may contact the customer with additional questions or suggested modifications to the trade.¹⁵⁹

To date, the SEC has granted no-action letters to eleven propri-

erally McCartney, *Trading Via Computer: It's Already Here*, Washington Post, July 1, 1990, at H5.

153. SEC, MARKET REGULATION AUTOMATION REPORT, *supra* note 71, at 17 n. 25. These parties operate on more than 900 Instinet terminals within North American and over 125 terminals outside of North America.

154. *Id.* at 17-19. Instinet is a broker registered with the SEC, and a member of the NASD, the American Stock Exchange, the Pacific, Midwest, Philadelphia, Boston, and Cincinnati Stock Exchanges, the Chicago Board Options Exchange, and the National Securities Clearing Corporation. It is also a member of the International Stock Exchange in London, the Toronto Stock Exchange, and the European Options Exchanges in Amsterdam. *See* Comment letter, Instinet Corporation, at 2 (Aug. 2, 1989) (available from Cadwalader, Wickersham & Taft, 1333 New Hampshire Ave. N.W., Washington, D.C. 20036) (commenting on Securities Exchanges Act proposed Rule 15c2-10 discussed *infra* at notes 181 to 184).

155. SEC, MARKET REGULATION AUTOMATION REPORT, *supra* note 71, at 17.

156. An indication of interest lets the viewer know that another investor would be willing to purchase or sell a certain amount of stock at a specified price.

157. Exhibit A, Description of Instinet System, accompanying comment letter, Instinet Corporation, *supra* note 154, at 80.

158. SEC, MARKET REGULATION AUTOMATION REPORT, *supra* note 71, at 20.

159. *Id.*

etary trading systems, including Instinet and POSIT.¹⁶⁰ It has been predicted that there will be increased competition in the automated markets, especially as systems develop in the international arena.¹⁶¹ This competition is likely to result in systems offering 24-hour trading, and access to the international market by all interested participants.¹⁶² The investor should ultimately be the one to gain, with cheaper and more efficient ways to trade securities.¹⁶³

II. REGULATION OF ELECTRONIC MARKETS

The electronic trading systems are presenting new and interesting questions for industry regulators. Below, two different aspects of problems are reviewed. First, we look at the domestic market where the SEC is contending with the very specific question of how to regulate existing and future proprietary trading systems. Thereafter, we take on the broader policy issues which arise when trading is done on a global scale, where different national regulatory schemes must interact with one another to meet the needs of the new international securities market.

A. Regulation in the Domestic Market: The SEC and Proposed Rule 15c2-10

In order to determine how or whether these new automated systems are to be regulated under the existing securities laws, they must first be defined. Some argue that the proprietary trading systems meet the statutory definition of an exchange, and as such, should be required to meet all of the registration requirements.¹⁶⁴ However, the Commission has been treating some systems, like In-

160. Proprietary Trading Systems, Notice of Proposed Rulemaking, Release No 34-26708, 54 Fed. Reg. 15429, 15431 (1989) (to be codified at 17 C.F.R. pt. 240) (proposed Apr. 18, 1989) [hereinafter PTS, Proposed Rule]. In a no-action letter, the SEC informs an operator of a proprietary trading system that, subject to certain conditions, the SEC Staff will not recommend enforcement action against the system if the system does not register as an exchange under the Securities Exchange Act of 1934. *Id.* at 15429-15430. See *infra* notes 164 to 197 and accompanying text for a discussion of proposed Rule 15c2-10.

In *Board of Trade of City of Chicago v. SEC*, 923 F.2d 1270 (7th Cir. 1991), the court held that Delta Government Options Corp., a computerized system for trading options on government securities does not have to be designated as an exchange under Section 3(a)(1) of the Securities Exchange Act of 1934. *Id.* at 1272-73. The Commission's interpretation of the section that the system was not a statutory exchange, the court ruled, was entitled to deference because the statute is "not crystal clear." The court pointed out, among other things, that Delta lacks a traditional trading floor. *Id.* at 1273.

161. Freund, *supra* note 55, at 14.

162. *Id.*

163. *Id.*

164. See, e.g., Comment letter, New York Stock Exchange (Aug. 2, 1989) (available from the New York Stock Exchange, 11 Wall St., New York, N.Y. 10005).

stinet, for example, as broker-dealers for regulatory purposes.¹⁶⁵

On April 18, 1989, the SEC requested comments on a proposed Rule 15c2-10 which would govern proprietary trading systems.¹⁶⁶ Prior to this proposal, the SEC had taken a "no-action" approach, whereby the Commission reviewed a proprietary trading system, and thereafter, informed the operators of the system that the Commission would not recommend enforcement action against the system if it did not register as an exchange, provided that the system meets certain conditions.¹⁶⁷ After receiving some critical responses to the no-action approach,¹⁶⁸ and following the Commission's additional experience dealing with proprietary trading systems, the SEC decided to re-examine its procedures regarding its oversight of proprietary trading system.

The Commission expressed its concern that as proprietary trading systems become more complex and particularly as they develop the capability of linking with foreign markets, the no-action approach may no longer be adequate.¹⁶⁹ The Commission would want to be able to ensure that the foreign participants are financially responsible and that they have complied with U.S. securities laws. Further, due to differences between U.S. securities laws and foreign law,¹⁷⁰ the Commission sees the need to have a mechanism in place to obtain that surveillance information from the foreign country, in the event of securities violations on these trading systems.¹⁷¹

The SEC cited other considerations that favored a review of its regulatory approach to proprietary trading systems. The new regulation would ensure that the systems have sufficient capacity to function in times of unusually heavy volume.¹⁷² It would also make certain that access to the systems was fair and non-

165. PTS, Proposed Rule, *supra* note 160, at 15430.

166. *Id.* at 15429.

167. *Id.* For example, the Commission would require systems operators to provide data quarterly. *Id.* at 15434 n.40.

168. Commenters had argued that the no-action approach for proprietary trading systems could provide them with an unfair competitive advantage over similar systems used by securities exchanges or associations which are subject to registration requirements. *Id.* at 15430.

169. *Id.* The Commission also noted that certain trading systems have failed to request no-action positions.

170. *See infra* notes 205 to 213 and accompanying text for a discussion of the difference between U.S. and foreign securities law.

171. PTS, Proposed Rule, *supra* note 160, at 15430. In approving the existing market linkages discussed *supra* note 125, the SEC required that participants implement surveillance information sharing agreements. *See Note, supra* note 125, at 651-53 (describing negotiations between the SEC and the Ontario Securities Commission regarding information sharing prior to approval of the Amex-Toronto Stock Exchanges link).

172. *See* SEC, MARKET REGULATION REPORT, *supra* note 19, at 7-48 to 7-49; BRADY REPORT, *supra* note 28, at VI-11; GAO: OCTOBER CRASH REPORT, *supra* note 33, ch. 8.

discriminatory.¹⁷³

From a legal standpoint, the inquiry into the regulation of new automated systems begins with the definition of "exchange" in the Securities Exchange Act of 1933 ("The Exchange Act"). As defined in Section 3(1)(1), an exchange is any organization that provides a marketplace or a facility which brings together purchasers and sellers of securities.¹⁷⁴ It includes an organization which performs the same functions as a stock exchange, "as that term is commonly understood."¹⁷⁵ This general definition of an exchange made sense in 1934, when the drafters could not foresee the electronic trading systems of the future. The definition of a "facility," found in Section 3(a)(2), refers back to the definition of an "exchange," and includes the right to use the exchange's property or services to effect or report a transaction.¹⁷⁶ However, the Exchange Act also provided for an exemption. Section 5 exempts exchanges from registration if it is not practicable or necessary to require registration due to the limited volume of transactions on the system.¹⁷⁷

173. PTS, Proposed Rule, *supra* note 160, at 15433.

174. 15 U.S.C. § 78c(a)(1) (1988). This section defines the term "exchange" as:

[A]ny organization, association, or group of persons, whether incorporated or unincorporated, which constitutes, maintains, or provides a market place or facilities for bringing together purchasers and sellers of securities or for otherwise performing with respect to securities the functions commonly performed by a stock exchange as that term is generally understood, and includes the market place and the market facilities maintained by such exchange.

Id.

175. *Id.* The legislative history does not help focus the definition of the terms "exchange" or "facility." The Senate report observed that the definition of "exchange" was "self explanatory," and it offered no elaboration on the definition of "facility." S. REP. NO. 792, 73rd Cong., 2d Sess. 14 (1934). See PTS, Proposed Rule, *supra* note 160, at 15432.

176. 15 U.S.C. § 78c(a)(2) (1988). This section states that the term "facility" when used with respect to an exchange includes its premises, tangible or intangible property whether on the premises or not, any right to the use of such premises or property or any service thereof for the purpose of effecting or reporting a transaction on an exchange (including, among other things, any system of communication to or from the exchange, by ticker or otherwise, maintained by or with the consent of the exchange), and any right of the exchange to the use of any property or service.

Id. If the definitions of "exchange" and "facility" were to be construed broadly, they could subsume not only proprietary trading systems, but also many of the activities of over-the-counter market makers as well. It is unlikely that Congress intended every dealer's desk to be subject to the regulations requirements of an exchange.

177. 15 U.S.C. § 78e (1988). This section states that it shall be unlawful for any broker, dealer, or exchange, directly or indirectly, to make use of the mails or any means or instrumentality of interstate commerce for the purpose of using any facility of an exchange . . . to effect any transaction in a security, or to report any such transaction, unless such exchange (1) is registered as a national securities exchange under section 78f of this title, or (2) is exempted from such registration upon application by the exchange

In its request for comments on proposed Rule 15c2-10, the Commission stated its belief that proprietary trading systems are "distinguishable in function from exchange markets."¹⁷⁸ The proprietary trading systems execute trades which are based on "derivative pricing," that is, they are based on a quotation provided by another entity. Further, the Commission was not ready to decide that the proprietary trading systems are exchanges because they do not involve transactions in which participants enter two-sided quotations on a regular or continuous basis.¹⁷⁹

If the proprietary trading systems were to be regulated as exchanges, the Commission stated that the exchange registration requirements of Section 6¹⁸⁰ would present a great burden on the proprietary systems, which would, in effect, act as a barrier to entry. Imposition of these regulatory requirements would deter development of innovative trading systems. Therefore, the Commission proposed Rule 15c2-10 as an regulatory alternative.¹⁸¹

Rule 15c2-10 would first require the identification of trading and information facilities, including a description of the system and the types of securities to be traded. The system would then submit a plan describing the method of operation,¹⁸² the terms and conditions of access, and the emergency procedures in the event of operation failure. The plan would include a description of the system's requirements for the financial soundness of its subscribers, as well as of the system's requirements for the financial soundness of its subscribers, as well as of the system's procedures for the supervision of compliance by subscribers with the federal securities laws, rules and regulations.¹⁸³ Finally, the proprietary trading system would enter into a series of agreements with the Commission, including agreements regarding record keeping, submission of data annually, and system-wide supervision of the system to ensure compliance with the plan and with the federal securities laws.¹⁸⁴ The proposed rule also specifies provisions for other contingencies, such as plan amendments.

because, in the opinion of the Commission, by reason of the limited volume of transactions affected on such exchange, it is not practicable and not necessary or appropriate in the public interest or for the protection of investors to require such registration.

178. PTS, Proposed Rule, *supra* note 160, at 15433.

179. *Id.*

180. 15 U.S.C. § 78f (1988).

181. The text of the proposed rule is found at 54 Fed. Reg. 15438-15440 (1989) (to be codified at 17 C.F.R. pt. 240.5c2-10).

182. The description would include procedures governing the execution of trades, entry of indications of interest, quotations, and order, and if applicable, a description of any procedures for clearance and settlement. PTS, Proposed Rule, *supra* note 160, at 15435, 15439.

183. *Id.*

184. *Id.*

Following publication of the notice of proposed rulemaking, interested parties filed comments with the SEC. Most persuasive we believe was the argument that while proprietary trading systems do indeed conform to the literal definition of an exchange found in the statute, they should nevertheless be exempted from the burdens of registration as exchanges until they evolve into "mature" marketplaces.¹⁸⁵ The imposition of certain conditions on the exemption, similar to those proposed for Rule 15c2-10, would satisfactorily protect investors using the systems, as well as contribute to the maintenance of fair and orderly markets.

Other commenters expressed a preference for the no-action approach presently used by the Commission because it reduces "red tape" and keeps costs for these new systems low.¹⁸⁶ The cost of complying with regulatory requirements is, for the most part, fixed and small proprietary systems should not be expected to be the same fixed costs as the larger exchanges.¹⁸⁷ The cost of regulation as a percentage of the cost of each trade will be proportionally higher for the proprietary system than for the larger exchanges.¹⁸⁸ If the cost of operating such systems becomes too high because of increased regulatory requirements, the system will move offshore to avoid the costs.¹⁸⁹ Further, in response to the argument that "exchange status" and the notion of innovation are mutually exclusive, one commenter pointed to the automated systems used by the New York Stock Exchange and the regional exchanges as evidence to refute that claim.¹⁹⁰

Finally, opponents of the regulation argued that Rule 15c2-10 would impose an unnecessary regulatory burden on proprietary trading systems which can otherwise be adequately regulated as brokers. Instinet, for example, maintained that it merely automated the business of the broker.¹⁹¹ Further, Instinet stated that it

185. See Comment letter, Chicago Board Options Exchange (Aug. 7, 1989) (available from The Chicago Board Options Exchange, LaSalle at Van Buren, Chicago, Ill 60605).

186. Comment letter, National Partnership Exchange, Inc. (June 15, 1989) (available from the National Partnership Exchange, Inc., 100 W. Kennedy Blvd., Suite 260, P.O. Box 578, Tampa, Florida 33601-0578).

187. Comment letter, Petruzzi Associates (June 8, 1989) (available from ECON, Investment Software, One World Trade Center, Suite 7967, New York, N.Y. 10048).

188. *Id.*

189. *Id.* Mr. Petruzzi noted that at least one proprietary trading system operates in Bermuda. The cost of a phone call to Bermuda is not much greater than a call within the United States and the system effectively escapes regulation.

190. Comment letter, Chicago Board of Trade (July 19, 1980) (available from the Chicago Board of Trade, LaSalle at Jackson, Chicago, Ill 60604). See *supra* notes 56 to 121 and accompanying text for a discussion of the automation of the brokerage process.

191. Comment letter, Instinet Corporation, *supra* note 154, at 11-15.

should not be regulated as an exchange for several reasons: Instinet communicates quotations of other exchanges or markets¹⁹² and there is no Instinet "market," no physical floor or central place where market makers and traders meet, nor are there "members" of Instinet.¹⁹³ Instinet also expressed concern that the promulgation of Rule 15c2-10 would stifle innovation and adversely affect its expansion into international markets.¹⁹⁴

But, with its capability for executing trades, Instinet goes beyond the functions of a "mere broker." Looking at the statutory language which defines an exchange, it is clear that a proprietary trading system is an organization which provides facilities for bringing together purchasers and sellers. This definition does not include such requirements as a physical trading floor or central meeting place, or a continuous two-sided quotation system. However, even if a proprietary trading system falls within the statutory definition of an exchange, the Exchange Act also includes an exemption for exchanges with limited volume in Section 5.¹⁹⁵ Further, conditioning the exemption with requirements similar to those found in Rule 15c2-10 would be in the public interest. One commenter warned, however, that the Commission, in establishing the appropriate "limited volume," should not let the exception swallow the rule.¹⁹⁶ In setting the limits on volume, the Commission would also be determining the point at which a proprietary system no longer needs the benefit of exemption, but has matured and is ready to compete with the established exchanges.¹⁹⁷

As of this writing, the Commission has not acted upon its proposed rule.

B. *The Special Problem of Regulation in the Global Market*

The stock market collapse in October 1987 graphically illustrated the interdependence of the world's stock markets.¹⁹⁸ The reverberations of the fall of prices on the U.S. market caused havoc

192. *Id.* at 16-19.

193. *Id.* at 20-22. In a recent article discussing electronic exchanges, it was observed that Instinet is part of the larger Reuters family which is subject to varying degrees of regulation. Instinet is presently regulated as a broker; Globex, the electronic system for futures trading, is governed by the contract with the exchange, and Reuters currency dealing terminal is not regulated at all. Yet in all three cases, Reuters offers the same service: the means to view bids and offers and the means to execute the orders. "In all three cases, of course, Reuters is bringing buyer and seller together and performing the function of an exchange." Hansell, *supra* note 129, at 191.

194. Comment letter, Instinet Corporation, *supra* note 154, at 9.

195. 15 U.S.C. § 78e (1988).

196. Comment letter, Chicago Board Options Exchange, *supra* note 185, at 8.

197. Comment letter, New York Stock Exchange, *supra* note 164, at 6.

198. See, e.g., SEC, MARKET REGULATION REPORT, *supra* note 19, at XXV.

abroad, as evidenced by the rapid response of the major world stock markets.¹⁹⁹ According to the SEC Staff, "[T]he interdependency of the world's securities markets was never more apparent than during the [October 1987] market break."²⁰⁰

Advances in technology will continue to increase the globalization of the securities markets. The changes in technology and in its availability to investors will encourage further trading on an international scale. The globalization of securities creates new challenges for securities regulators around the world. Regulators must re-examine their national policy goals and develop positions responsive to advancing the integrity of the international market.

1. Policy Objectives in Regulation

The United States has developed a complex set of securities regulation to advance several broad policy objectives. In response to the "destructive speculation" which preceded the 1929 stock market crash,²⁰¹ Congress enacted the Securities Act of 1933²⁰² and the Securities Exchange Act of 1934²⁰³ which set forth disclosure requirements to protect investors making investment decisions.²⁰⁴ The legislation also has several anti-fraud provisions to ensure that investors are not subject to unfair and fraudulent trading practices.²⁰⁵ Practices including insider trading, market manipulation and misrepresentations to the marketplace are prohibited.²⁰⁶

Congress has amended the securities laws to maintain the integrity of U.S. securities markets, to ensure the working of an efficient and stable market, and to facilitate the free flow of capital throughout the world.²⁰⁷ Some specific areas of concern to the regulator include automated information trading systems, clearance and settlement systems, and the financial responsibilities of securi-

199. *Id.*

200. *Id.*

201. Letter from Franklin D. Roosevelt to Congress (Feb. 9, 1934), *reprinted in*, H.R. REP. NO. 1383, 73rd Cong., 2d Sess. 2 (1934).

202. 15 U.S.C. § 77 (1988).

203. 15 U.S.C. § 78 (1988).

204. *See, e.g.*, 15 U.S.C. §§ 77e-g, j (1988) (requiring the filing of a prospectus and registration statement for new issues of securities); 15 U.S.C. § 78l(a)(b) (1988) (requiring the filing of a registration statement to trade a security on a national securities exchange). *See generally* I & II L. LOSS & J. SELIGMAN, SECURITIES REGULATION 513-850 (1989) (discussing the administrative procedure for filing a registration).

205. 15 U.S.C. § 78i,j (1988); 17 C.F.R. § 240.10b-5 (1987).

206. *Id.* § 78i, j; 17 C.F.R. § 240.106-5.

207. *See, e.g.*, 15 U.S.C. § 78k-1 (1988) (establishing a national market system for securities); *see also* C. Cox, *Harmonization of Securities Regulation — Where are We Heading?* (Speech, June 8, 1988 at Conference on Internationalization, Seoul Korea) (text available from the SEC, Washington, D.C. 20549).

ties firms.²⁰⁸

Other nations have developed regulatory schemes in response to their particular national needs. Most regulatory systems evolved over time; they were not established as a complete, integrated systems.²⁰⁹ Historically, securities industries were often self-regulated, and at some point, authorities saw the need to come in and establish a more formal regulatory framework.²¹⁰

Today, some form of oversight of the trading of securities is found in the various nations where securities are traded. One important factor which helps define the scope of a nation's regulation is the nature of the financial institutions used to market securities. In some countries, such as the United States, Canada, and Japan, separate institutions engage in banking and securities activities.²¹¹ However, in other countries, such as Austria, Germany, and Switzerland, banks play a major role in the securities markets and often there is no specific governmental institution empowered to oversee the regulation of securities. In these countries which use the "universal banking" system, bank supervisory authorities oversee both the banking as well as the securities activities, although the self-regulatory groups are often enlisted to monitor trading practices and set standards for securities which are traded in the secondary market.²¹²

Regulatory differences may also be a function of different legal systems.²¹³ For example, all countries do not have the same settlement procedures.²¹⁴ The differences may result from a country's legal traditions. For example, in the United States, settlement and

208. SEC Policy Statement, Regulation of International Securities Markets, 53 Fed. Reg. 46963, 46964 (Nov. 21, 1988).

209. Kubler, *Regulatory Problems in Internationalizing Trading Markets*, 9 U. PA. J. INT'L BUS. L. 107, 113 (1987).

210. See *Arrangements for the Regulation and Supervision of Securities Markets in OECD Countries*, 41 FINANCIAL MARKET TRENDS 23 (Nov. 1988) [hereinafter *Securities Markets in OECD Markets*]. See generally H. BLOOMENTHAL, *supra* note 115, at § 1.08 [2].

211. *Securities Markets in OECD Countries*, *supra* note 210, at 24.

212. *Id.* at 24-25.

213. Kubler, *supra* note 209, at 113.

214. Settlement periods vary greatly around the world — from two days in Belgium and five days in the United States to one month in France. See Cox, *supra* note 207, at 36.

Further, all countries still do not have fully automated clearance and settlement systems. See D. Ruder, *Internationalization of the Securities Markets* (Speech, Sept. 26, 1988 at U. of Wisconsin School of Bus. Admin., Milwaukee, WI) (text available from the author).

In Europe, two organizations, Euro-clear and CEDEL, have emerged for settling and clearing international transactions. They provide clients with services such as securities clearance through a book entry system (which eliminates the physical transfer of securities), custody of securities, and securities lending and borrowing. The systems can settle transactions in some 27 different curren-

clearance is based on a trust relationship, while in Germany, the statute is based upon property law.²¹⁵

Choice of law questions take on a new dimension in the electronic global market.²¹⁶ For example, while it is traditionally held that national securities law apply to those transactions executed in the market of that country, electronic markets may make it difficult to determine in which country a transaction takes place.²¹⁷ Further, certain electronic markets are organized outside the traditional stock exchange, in the "third market," and again, technology may compound the choice of law problems.

2. Approaches to a Regulatory Solution

A solution to the regulation of securities in the international market could be crafted in several ways. Nations could, for example, adopt uniform international law or form an international organization to oversee international transactions. They could accept one another's laws reciprocally or they could harmonize their respective securities laws. Nations might prefer to enter into bilateral or multilateral agreements to deal with specific regulatory problems.²¹⁸

The adoption of a uniform international law by all nations would surely be an ideal solution to the problems of internationalization.²¹⁹ However, it is not likely to occur in the near future. As noted above, nations presently have in place different financial institutions to handle the selling and trading of securities and various nation's laws reflect different regulatory goals. Even if the nations were able to come to an agreement, the cost of reworking the existing financial structures to conform with the new uniform law would defeat its implementation.²²⁰

Instead, nations have been working to "harmonize" their secur-

cies. THE DOW JONES-IRWIN GUIDE TO INTERNATIONAL SECURITIES, FUTURES, AND OPTIONS MARKETS 17-18 (W. Nix and S. Nix, eds. 1988).

An International Securities Clearing Corporation ("ISCC") has been created to centralize the development of international linkages. STAFF OF THE SEC, INTERNATIONALIZATION OF THE SECURITIES MARKETS V-68 (July, 1987). The ISCC has established relationships with the International Stock Exchange in London, the Stock Exchange of Singapore, and the Japan Securities Clearing Corporation, a wholly owned subsidiary of the Tokyo Stock Exchange. Rothwell, *supra* note 121.

215. Kubler, *supra* note 209, at 113.

216. Hirsch, Choice of Law Questions in the Regulation of International Computerized Trading (Speech, June 15, 1989, at ABA Program on Int'l Sec. Trans., New York, NY) (available from the author).

217. *Id.* at 254.

218. *Id.*

219. Kubler, *supra* note 209, at 112.

220. *Id.*

ities laws.²²¹ Regulatory harmonization involves cooperation and a reduction of disparities of the regulation of securities markets.²²² This approach stresses the need for the appropriate bodies — be they government agencies or self-regulatory organizations — to work together to link and coordinate their regulatory structures in the face of ever-increasing internationalization of securities markets.²²³ A ready example of this approach is found in the efforts towards international harmonization of accounting standards used in the preparation of financial statements.²²⁴ The eventual adoption of an international set of accepted accounting principles would go far to reduce barriers to the making of multinational offerings.²²⁵

In another context, the European Community has successfully used harmonization of company and capital market law to create an integrated economic market.²²⁶ The use of harmonization has also been praised because it can take into account the basic economic policy concerns which underlie the financial markets.²²⁷

However, the harmonization approach has been criticized because it takes a long time to negotiate and implement.²²⁸ Again, the European experience with harmonizing company and capital mar-

221. According to one observer, regulators are "becoming like barber-shop quartets — all harmonization." *Hang Loose, Mr. Regulator*, *The Economist*, Sept. 30, 1989, at 15 [hereinafter *Harmonization*] (commenting on the annual conference of the International Organization of Securities Commissions in September 1989).

222. Note, *Insider Trading Liability in Great Britain and Singapore: Can Regulatory Harmonization Close the Floodgates to Fraud in the International Markets?*, 14 *BROOKLYN J. INT'L L.* 357 (1988).

223. Cox, *supra* note 207, at 3.

224. *Accounting Body Proposes Harmonizing Financial Statement Rules Worldwide*, Sec. Reg. & L. Rep. (BNA) vol. 21, No. 1, at 46 (Jan. 6, 1989) [hereinafter *Harmonizing Financial Statement Rules*]. See generally H. BLOOMENTHAL, *supra* note 115, at § 1.08 [6].

225. Under the present system, a U.S. company involved in a multinational offering has to prepare financial statements according to the U.S. generally accepted accounting principles (GAAP), and then must also prepare statements according to the different accounting rules of every country where it wishes to make the offering. If an international GAAP is ultimately adopted, the U.S. company need provide only one statement according to U.S. GAAP, which is then reconciled to the international standard. Such an approach should reduce costs involved in multinational offerings. *Harmonizing Financial Statement Rules*, *supra* note 224, at 47.

226. See, e.g., R. BUXBAUM & K. HOPT, *LEGAL HARMONIZATION AND THE BUSINESS ENTERPRISE* ch. 3 (1988) (discussing Europe's efforts to harmonize company and capital market law).

227. See Kubarych, *International Regulatory Harmonization: The Economic and Financial Environment*, 14 *BROOKLYN J. INT'L L.* 225, 268 (1988).

228. Mendelson, *Need for Regulation: Lessons from Eurobond Market*, in *CURRENT DEVELOPMENTS IN INTERNATIONAL SECURITIES COMMODITIES AND FINANCIAL FUTURES MARKETS* 42, 56 (H. H. M. Chew, H. P. Kee, and P. N. Pillai, eds. 1987).

ket law confirms the validity of this criticism.²²⁹ Another reservation is that the spirit of international cooperation will go too far, and regulators will begin to re-regulate areas that were effectively de-regulated during the 1980s.²³⁰

Another viable route to solving international regulatory problems is through bilateral agreements. One advantage of a bilateral agreement is that it allows regulators to develop an agreement that is consistent with the domestic law of each respective country.²³¹ Bilateral agreements also advance the goal of international comity.²³² However, the use of bilateral agreements, like the harmonization of laws approach, is subject to lengthy negotiation before an agreement is reached.²³³ Further, bilateral agreements, which by their very nature involve only two specific nations, cannot present solutions to problems of global proportions.

3. *Efforts by the United States Addressing International Securities Issues*

The United States continues to work with other nations in approaching the regulation of international securities markets.²³⁴ The SEC encourages the development of international securities markets and in particular, has been working to develop an appropriate regulatory framework to prevent trading abuses in those markets.²³⁵

The Commission issued a statement in November 1988, emphasizing the need for cooperation among regulators around the world. The policy statement proposed that "concepts of accommodation and comparability" should be used to deal with the differences in

229. *Harmonization*, *supra* note 221, at 15. "Co-operation between the world's securities regulators is fine, within bounds." *Id.*

230. *Id.*

231. See Note, *Insider Trading and the Internationalization of the Securities Markets*, 27 COLUM. J. TRANSNAT'L L. 409, 431 (1989)

232. *Id.* International comity is the "recognition which one nation allows within its territory to the legislative, executive or judicial acts of another national, having due regard both to international duty and convenience, and to the rights of its own citizens or of other persons who are under the protection of its laws. . . ." *Hilton v. Guyot*, 159 U.S. 113 (1985). See generally Yntema, *The Comity Doctrine*, 65 MICH. L. REV. 9 (1966).

233. See Note, *supra* note 231, at 432. In addition, the author notes that after the lengthy negotiations are complete, violators of securities law will have moved to another jurisdiction, always staying one step ahead of the SEC. *Id.* at 432-3.

234. SEC Policy Statement, Regulation of International Securities Markets, 53 Fed. Reg. 46963 (Nov. 21, 1988) [hereinafter SEC Policy Statement].

235. Becker, *A Regulatory Perspective on the Global Securities Market*, 1987 COLUM. BUS. L. REV. 309. At the time of writing, Mr. Becker was Associate Director of the Division of Market Regulation, Securities and Exchange Commission.

regulatory approaches adopted by the other nations.²³⁶ The SEC observed that regulators should be "sensitive to cultural differences and national sovereignty concerns. . . and respectful of existing national regulatory frameworks."²³⁷ The Commission has advocated a move toward a "harmonized" system of securities regulation.²³⁸ For example, advances have been made, as noted earlier, to harmonize the accounting standards used in financial disclosure.²³⁹

To enhance its investigations of violations of securities laws, the SEC has entered into several bilateral treaties with six other nations for the production of evidence, including Switzerland, Canada, and Great Britain.²⁴⁰ In addition, the Commission has negotiated five informal "memoranda of understanding" ("MOUs") for the sharing of information and assurances of cooperation in investigations and litigation.²⁴¹ In addition, the United States is active in the international organizations discussed below.

4. International Efforts

Several international organizations address questions relating to international securities regulations. The International Organization of Securities Commissions ("IOSCO") was established in the 1970s to facilitate discussion among securities regulators from more

236. SEC policy statement, *supra* note 234, at 46963.

237. *Id.*

238. For a discussion of the different issues presented by international trading and the harmonization of trading regulations, see *supra* notes 213 to 220 and accompanying text; see also Cox, *supra* note 207, at 3.

239. See *supra* notes 213 to 220 and accompanying text for a discussion of issues surrounding "harmonization" of regulation.

240. The six treaties are: 1) Treaty on Mutual Assistance in Criminal Matters between the Swiss Confederation and the United States, May 25, 1973, 27 U.S.T. 2019 (effective 1977);

2) Treaty on Mutual Legal Assistance between the Kingdom of the Netherlands and the United States, June 12, 1981, T.I.A.S. No. 10743;

3) Treaty on Extradition and Mutual Assistance between the United States of America and the Republic of Turkey, June 7, 1979, T.I.A.S. No. 9891;

4) Treaty between the United States of America and the Italian Republic on Mutual Assistance in Criminal Matters, November 13, 1985, Sen. Ex. 98-25, 98th Cong. 2d Sess;

5) Treaty between the Government of Canada and the United States on Mutual Legal Assistance in Criminal Matters, 24 I.L.M. 1092; and

6) Treaty between the United States and the United Kingdom and Northern Ireland Concerning the Cayman Islands Relating to Mutual Legal Assistance in Criminal Matters, 26 I.L.M. 536.

241. Mann & Mari, *supra* note 125, at 72-97 (describing the memoranda of understanding with Switzerland, the United Kingdom, Brazil, Japan, and the Canadian provinces of Ontario, Quebec and British Columbia). For a discussion of the first MOU, see Salisbury, *International Agreements: United States-Switzerland Investigation of Insider Trading through Swiss Banks - Memorandum of Understanding*, Aug. 31, 1982, 23 HARV. INT'L L.J. 437 (1983).

than 40 countries.²⁴² IOSCO began as a predominantly educational group, and has since undertaken the coordination of international efforts in regulatory areas.²⁴³

IOSCO has several working groups and committees which discuss issues such as the acceleration of settlement and clearing systems and the modernization of prospectuses. At the 1989 conference, members met to discuss diversity of regulation, development of capital markets, disclosure practices in equities offerings, accounting standards, and standards of capital adequacy for securities firms.²⁴⁴

In its review, the General Accounting Office reported that IOSCO may have difficulties achieving securities regulation coordination.²⁴⁵ First, IOSCO does not have a full-time research staff. Second, it is a private group and its initiatives may not necessarily be adopted by the member countries. Third, only securities regulators are members; other market participants who may have valuable experience and perspective are excluded from discussions. Finally, since membership is limited to securities regulators, central banks are represented only as observers, even though in many countries securities activities are carried on by banks.²⁴⁶

Another forum which provides opportunities for interaction among securities regulators is the Organization for Economic Development and Cooperation ("OECD").²⁴⁷ This organization was founded to promote the economic development of the 24 member nations, and to contribute to the expansion of world trade.²⁴⁸ Ambassadors and cabinet-level ministers from the member countries attend the OECD meetings.²⁴⁹

242. Mann & Mari, *supra* note 125, at 99; GENERAL ACCOUNTING OFFICE, INTERNATIONAL FINANCE: REGULATION OF INTERNATIONAL SECURITIES MARKETS 18 (Apr. 1989) [hereinafter GAO: REGULATION OF INTERNATIONAL SECURITIES MARKETS]. The GAO prepared this report at the request on Senators Donald Riegle (D-Mich.) and Jake Garn (R-Utah) of the Senate Committee on Banking, Housing and Urban Affairs. The GAO provided an overview of the efforts to coordinate the international regulation of the securities markets, but made no recommendations.

243. GAO: REGULATION OF INTERNATIONAL SECURITIES MARKETS, *supra* note 242, at 18-19.

244. Karmel, *The IOSCO Venice Conference*, N.Y. Law J., Oct. 19, 1989, at 3, col. 3; see also *Harmonization*, *supra* note 221, at 15.

245. GAO: REGULATION OF INTERNATIONAL SECURITIES MARKETS, *supra* note 242, at 20.

246. *Id.*

247. Mann & Mari, *supra* note 125, at 100.

248. THE ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (undated). The OECD was founded in 1961 as the successor to the group which administered the Marshall Plan Aid following World War II. See GAO: REGULATION OF INTERNATIONAL SECURITIES MARKETS, *supra* note 242, at 18.

249. *Id.*

The OECD has a permanent research staff, the Committee on Financial Markets, which has been pursuing a comprehensive review of the trading of securities on the international market.²⁵⁰ However, the OECD's efforts at securities coordination have been focused on the flow of capital in international markets, rather than the harmonization of regulations.²⁵¹ Further, the OECD, while viewed as an important policy group which provides valuable research, is not seen as the one which will set the standards for the international securities markets.²⁵²

While the efforts of two groups and others²⁵³ highlight the importance of harmonizing and coordinating securities regulations, they also illustrate the practical difficulties that are to be encountered. These organizations are still striving to achieve success in the harmonization and coordination of securities laws.

5. *Electronic Trading Systems and the Global Market: Regulatory Challenge for the Future*

The trading of securities on a global level has become technologically feasible and automation will continue to advance the internationalization process. Regulators at the national level must meet the challenge of protecting their investors and maintaining the integrity of their markets in the face of this internationalization. Market participant — investors, exchanges, the NASD, the operators of proprietary trading systems — require a level of certainty as to the applicable regulatory scheme in order to operate.

250. See ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, INTERNATIONAL TRADE IN SERVICES: SECURITIES (1987); *Arrangements for the Regulation and Supervision of Securities Markets in OECD Countries*, 41 FINANCIAL MARKET TRENDS 17 (Nov. 1988).

251. GAO: REGULATION OF INTERNATIONAL SECURITIES MARKETS, *supra* note 243, at 18.

252. *Id.* at 20.

253. Other groups are studying issues relating to international securities regulation. The International Federation of Stock Exchanges (Federation Internationale Des Bourse de Valeurs or FIBV) facilitates the exchange of information among a group of 33 stock exchanges. It has produced studies on clearance and settlement problems, as well as listing and disclosure issues.

The "Group of Thirty" (formally the Consultative Group on Economic and Monetary Affairs) is an ad hoc group made up of bankers, international businessmen, and academics who study broad financial issues.

Finally, the Wilton Park Group is a group of regulators who meet informally to discuss means to share information in the enforcement of securities laws. The meetings, sponsored by the Department of Trade and Industry in the United Kingdom, have been attended by representatives from Australia, Canada, the Federal Republic of Germany, France, Great Britain, Hong Kong, Japan, the Netherlands, Switzerland, and the United States. See Mann & Mari, *supra* note 125, at 99-100; GAO: REGULATION OF INTERNATIONAL SECURITIES MARKETS, *supra* note 242, at 19.

Some of the present mechanisms for solving conflict of law questions which likely will arise on the emerging international electronic market are unsatisfactory. Application of the traditional conflicts of law approach, which rests on the application of the law of the country where the transaction occurs, has been criticized by those advocating the more modern approaches which look to the law of the state with the "most significant relationship"²⁵⁴ to the transaction or to the law of the state with the greatest governmental interest in regulating the transaction.²⁵⁵ However, as the ability and facility to transmit data globally increases, it will become more and more difficult to find the state with the most significant relationship or the greatest governmental interest. Reliance on the application of choice of law principles does not further the market participants' need for certainty and predictability.

Another existing, and again unsatisfactory, approach to problems which arise in the international context is the extraterritorial application of national law. In the United States, different circuits courts apply somewhat different standards to determine whether U.S. securities laws should be applied to international securities transactions.²⁵⁶ Further, other countries have blocking statutes or secrecy statutes in force to defend against the extraterritorial application of another nation's laws.²⁵⁷ Again, this approach does not foster certainty, nor does it advance the principles of international comity.²⁵⁸

The course of harmonizing laws presently being pursued works well to promote the goals of international cooperation, comity, and

254. RESTATEMENT OF THE LAW (SECOND) CONFLICT OF LAWS (1989).

255. See, e.g., B. CURRIE, SELECTED ESSAYS ON THE CONFLICT OF LAWS (1963).

256. See Note, *Section 10b and Transnational Securities Fraud: A Legislative Proposal to Establish a Standard for Extraterritorial Subject Matter Jurisdiction*, 23 GEO. WASH. J. INT'L L. & ECON. 101 (1989). Compare *Zoelsch v. Arthur Anderson & Co.*, 824 F.2d 27 (D.C. Cir. 1987) (holding that jurisdiction lies only when the domestic conduct comprises all the elements needed to establish a violation of section 10b of the Securities Exchange Act of 1934) with *Securities Exchange Commission v. Kasser*, 548 F.2d 109 (3rd Cir.), cert. denied *sub nom.*, *Churchill Indus. (Manitoba), Ltd. v. SEC*, 431 U.S. 938 (1977) (holding that jurisdiction lies when there is "at least some activity" in the U.S. to further the fraud in violation of section 10b).

257. Blocking and secrecy laws prevent information from being used in litigation outside of the country. Blocking laws enable a government to prohibit or control the distribution of information outside a nation's territorial boundaries to protect a state interest. A private party generally cannot waive the protection of the law. Secrecy laws, on the other hand, create rights in individuals, whereby the individual can prevent another from disclosing protected information. Generally the party who benefits from the law can waive its application in a given case. See Haseltine, *International Regulation of Securities Markets: Interactions between United States and Foreign Laws*, 36 INT'L & COMP. L. Q. 307 (1987).

258. See Note, *Predictability and Comity: Towards Common Principles of Extraterritorial Jurisdiction*, 98 HARV. L. REV. 1310 (1985).

predictability. However, some are concerned that this course will result in a "race to the bottom," where law will be reduced to the "lowest common denominator."²⁵⁹ A need exists for regulators to maintain the national standards consistent with the threshold goals of investor protection and preserving the integrity of the marketplace.

Efforts by international groups have begun to explore the problems arising from the internationalization of securities markets. However, at this time, no single group has emerged to coordinate these efforts. Further, compliance with the agreements developed by the international groups like IOSCO is purely voluntary. If, as seems likely, there may emerge one global securities market based on electronic trading, this new market will benefit from the institution of a single regulatory body to govern international transactions, an international agency with the power to enforce its regulations. This body may come from within the industry or may be imposed from without, by agreement by governments.

In the United States, a dual system of regulation exists — there is federal regulation as well as state regulation of securities. The trading of securities has flourished in such an environment. Similarly, those who wish to operate in the international market are, at least for the present, financially sophisticated parties. They should be able to comply with a complementary scheme of regulation that will affect their international transactions.

This notion of an international regulatory body to promote the policy goals of securities regulations, to continue the harmonization of regulations, to develop new regulations, and to see to their enforcement is appropriate and consistent with the emergence of a single market for the trading of securities. The formation of such an international body had been suggested by Senator Donald Riegle (D-Mich.), following the October 1987 crash, to better regulate and coordinate international securities markets.²⁶⁰ More recently, Representative Edward Markey (D-Mass.), during hearings on further international enforcement legislation to expand the SEC's powers, observed that bilateral agreements may not go far enough to prevent fraud on international markets.²⁶¹ While it has been suggested that domestic regulators would oppose of international regula-

259. Sommer, *Are we Risking the Integrity of our Securities Markets?* 5 FIN. EXEC. 24 (July/Aug. 1989); Hansell, *supra* note 129, at 195. See also Note, *supra* note 125, at 644-45.

260. Riegle says SEC should be Exempted from Possible Gramm-Rudman Cutbacks, Sec. Reg. & L. Rep. (BNA) vol. 19, No. 42, at 1605 (Oct. 23, 1987).

261. *Global Regulatory Agency May Be Needed to Stop Fraud, Markey Says*, Securities Week, Mar. 27, 1989, at 5.

tors,²⁶² this tier approach to regulation could be workable, just as the federal and state regulators have learned to complement each other's jurisdictional domains.

CONCLUSION

Technology has changed the way stocks are traded today. Computers now report changes in stock prices instantaneously and the information is transmitted by satellites around the globe. Computer systems are presently used to execute small trades without intervention by exchange specialists or over-the-counter market makers. Electronic systems permit investors and brokers to communicate and trade with each other outside of the traditional exchanges. Computers link stock exchanges around the country and around the world.

Advances in technology will continue to facilitate and accelerate the internationalization and globalization of securities trading. A single regulatory organization is needed to oversee the trading of securities on the international market. This body would work to harmonize existing rules and mandate new regulations to better protect investors all over the world. An international regulatory scheme would be designed to complement the regulation already required by domestic agencies or institutions. This international body would not only provide a regulatory framework to govern international transactions, but should also have the power to enforce the regulations and effectively police international securities fraud. The establishment of an international regulatory body would bring certainty and predictability to investors in world markets and would provide the requisite means to see that regulations are enforced.

262. Note, *Insider Trading Liability in Great Britain and Singapore: Can Regulatory Harmonization Close the Floodgates to Fraud on the Internationalized Markets?*, 14 BROOKLYN J. INT'L L. 357, 382 (1988).