
A Changing Stock-Exchange Environment

*Birgitte Søgaard Jensen, Financial Markets, and
Lone Natorp, Payment Systems*

INTRODUCTION

The structure of the European stock-exchange environment is changing rapidly. Almost every day, new alliances between stock exchanges, stock-exchange privatisations, Internet exchanges and electronic exchanges, as well as online brokers, etc. appear in the media. The changes are driven primarily by intensified competition, which is related to the deregulation of stock exchanges, technological progress and the increasing internationalisation of the securities markets.

This article outlines the trends on the European market and also presents a forward-oriented perspective: will the stock-exchange market be centralised or will it continue to consist of a host of local, national stock exchanges? How will the stock exchanges cope with tomorrow's competitive conditions? What will the ownership structure be?

First, the present market structure and the opportunities for securities trading available today are described. One of the objectives is to describe how the new market participants differ from the traditional stock exchanges. The factors driving change are thereafter described. In the second part of the article various topics are discussed, such as the consolidation of stock exchanges, the new market participants' influence on the stock exchanges and on brokers, ownership issues, and finally the regulation of securities trading. For each topic possible scenarios of future development are envisaged.

THE STOCK-EXCHANGE MARKET – PAST AND PRESENT

Historically, stock exchanges have been national institutions holding exclusive rights to conduct their activities. As a general rule, by tradition there was one stock exchange in each country. In recent years, several stock exchanges have been restructured as limited liability companies and the monopoly has been lifted. It is a widespread belief that the stock exchanges must be operated on market terms and be subject to effective competition. This implies that it can no longer be taken for granted that each country must of necessity have (at least) one stock exchange.

The focus of the article is stock exchanges and trading in securities listed on a stock exchange. The following description of the principal functions of the stock exchanges and the various methods by which securities can be traded is the basis for the rest of the article.¹

The principal functions of stock exchanges

A stock exchange has two principal functions. The first is the listing of securities. The stock exchange must approve prospectuses for the eligible securities and also administer the statutory information obligations imposed on the issuers.

Secondly, the stock exchange is a marketplace for its members to trade the listed securities. Previously, the brokers gathered physically on the floor where the price was fixed by auction. In the late 1980s the Copenhagen Stock Exchange was one of the first in the world to introduce electronic trading. Today, most stock exchanges have introduced electronic trading systems in some form or other, so it is no longer necessary for the brokers to be physically present at the stock exchange.

Besides offering the market a trading system, the stock exchanges also manage price information. Sale of price information can be an important part of the stock exchanges' business area.

Trading in listed securities

The dealers² can trade securities directly on a stock exchange, but some trading often takes place via a telephone market or a broker – in technical terms an "inter-dealer broker" – with subsequent notification to the stock exchange. Investors have traditionally traded securities via a dealer who then purchased/sold from his own portfolio or passed on the order to a stock exchange. The opportunities for dealers and investors to trade listed securities have undergone significant changes in recent years.

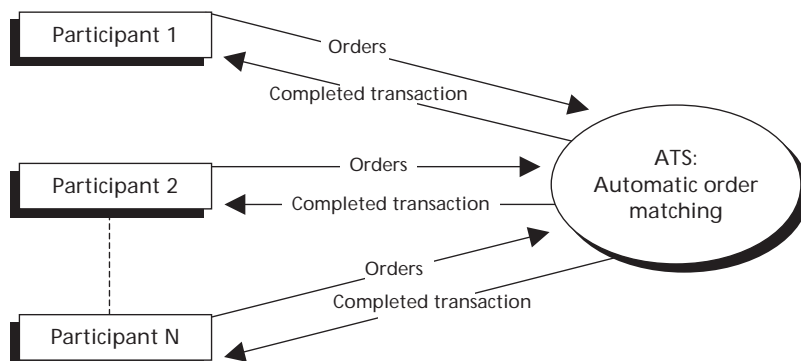
A number of Alternative Trading Systems (ATS) have emerged in recent years, particularly in the USA, whereby the participants can trade listed securities among themselves, without being members of a stock exchange. The participants can enter their buy or sell orders to the system which automatically checks for prices at which these orders can be matched. Chart 1 presents an ATS. Most alternative trading systems are open to securities dealers and/or institutional investors, but typically not to private investors.

¹ Clearing and settlement of the transactions are not considered in this article. Reference is made to Jesper Berg and Mogens Kruse, *Securities Settlement in an International Perspective*, this *Monetary Review*, p. 135ff.

² By Danish law a securities dealer can be a bank, a mortgage-credit institute, an investment company, Danmarks Nationalbank or the Danish Finance Agency.

ALTERNATIVE TRADING SYSTEM (ATS)

Chart 1



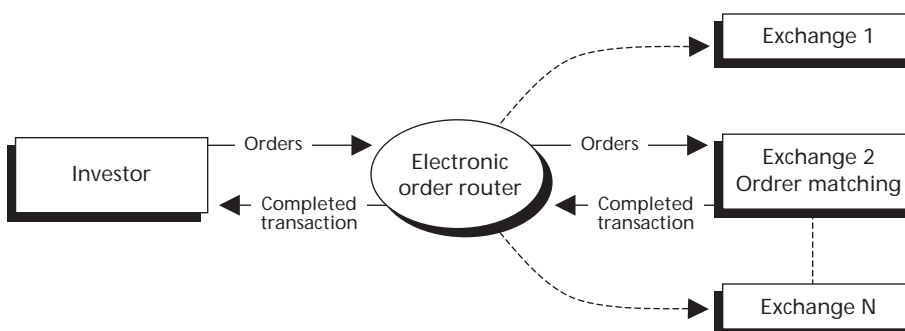
In terms of functions it is difficult to distinguish an ATS from a stock exchange. This is emphasised by the fact that a company can be established as an ATS and later be approved as a stock exchange. Typically, the stock exchanges have a listing function, while ATS are based on trading in securities listed elsewhere. The regulation of alternative trading systems is described in the last part of this article.

The alternative trading systems are well-established in the USA where they account for almost one third of total turnover in securities listed on NASDAQ, the exchange for IT stocks. ATS are just beginning to emerge in Europe. EuroMTS is an example of an ATS where securities dealers can trade large liquid European government bonds, cf. Box 1. Instinet and Tradepoint are ATS where the participants can trade stocks among themselves.

Listed securities can also be traded via an automatic order-routing system. The provider of this system is a member of several stock exchanges and thus offers investors to enter their orders to the relevant stock exchanges, cf. Chart 2. The background to this activity is e.g. tech

ELECTRONIC ORDER ROUTEING

Chart 2



Stocks

Instinet was established in as early as 1969 and is one of the most well-known examples of an ATS in the USA. On Instinet stocks listed on e.g. the New York Stock Exchange are traded. The investors (professional dealers and institutional investors) can view the sell and buy orders for a given share, accept an order, engage in anonymous price negotiation with the orderer, or enter an anonymous sell or buy order to the order book. Since the price is generated in the system it is also possible to trade after office hours on the stock exchange on which the stock is listed.

Tradepoint Stock Exchange started as an ATS in the UK in 1992, but was approved as a stock exchange in 1995. Professional dealers and institutional investors can enter anonymous orders to the system for automatic matching. Most listed stocks in the UK, and in the future also other European debt securities, can be traded via Tradepoint.

JIWAY was launched in February 2000 and is expected to commence operations in September. JIWAY is applying for the status of authorised stock exchange in the UK, but has not yet achieved authorisation. It aims to offer trading of 6,000 blue chips from Europe and the USA.

Bonds

EuroMTS is the European electronic inter-dealer broker. The MTS system was originally developed in 1988 in Italy as the trading system for Italian government bonds. In 1998 a separate private limited liability company, EuroMTS, was formed to undertake the construction of a trading system for benchmark bonds in the euro area, based on the same technology as MTS. EuroMTS is a wholesale system where professional dealers can trade large liquid bonds anonymously – first and foremost bonds from Germany, Italy and France. More and more countries are establishing national MTS systems for trading of less liquid bonds.

The plans to establish *BrokerTec* were launched in June 1999 with expected start in the summer of 2000. Like EuroMTS, BrokerTec is an electronic inter-dealer broker for bond trading, but trading in e.g. US bonds will also be offered.

BondClick.com is primarily for institutional investors who will be able to meet and trade European government bonds via this system. The plans to establish BondClick.com were launched in January 2000 and are not very detailed as yet.

Electronic order routing

*E*Trade Group* is a US Internet investment company offering private investors order routing to a stock exchange. Apart from the company in the USA subsidiaries have been established in several countries such as Canada, Australia, France, Sweden, UK, Japan, South Korea and now also Denmark. E*Trade has acquired the majority shareholding in Difko Børsmæglerselskab, which is now called E*Trade Danmark Børsmæglerselskab. The vision is for all E*Trade companies to be based on the same technology so that in the future they can be inter-connected as one global network.

nological differences between the various stock exchanges. The order router establishes electronic links to the various stock exchanges, while the investor requires only a link to the order router.

In Denmark a small number of banks offer electronic order-routing services to either the Copenhagen Stock Exchange and/or stock exchanges abroad, but more are in the pipeline. At present, Denmark has one Internet investment company. E*Trade is an international order router, cf. Box 1.

Both the alternative trading systems and the automatic order routers use electronic networks of interlinked computers. These can be closed networks requiring special equipment for connection, or an open network on the Internet.

In order to assess the potential changes in the stock-exchange markets in the coming years, the next section considers the factors which have driven the development so far.

FACTORS DRIVING CHANGE

Several factors have played a decisive role in the development of the stock exchanges. The technological development and the greater internationalisation have caused competition to intensify, while the advantage of being the first/largest on the market (the network effect) has had the opposite effect.

Technology

In several respects the development of information technology has had a decisive impact on changes in the securities trading area. Firstly, complex orders can now easily be processed in the electronic trading systems. Secondly, the systems can accommodate a virtually unlimited number of participants, in contrast to e.g. traditional floor trading where the number of participants is physically limited. Thirdly, IT development has eroded geographical borders. In principle, all that participation in an electronic trading system requires is the installation of a terminal/PC and a link to the system.

There are considerable economies of scale in relation to securities trading.¹ This is due to the relatively high costs of establishing a trading system and the low costs of increasing the trading volume in the system or including additional participants. Whether the economies of scale have increased or decreased as a result of the technological development is difficult to assess, but the establishment costs have probably decreased in step with the technological development. This has

¹ An empirical study of 37 stock exchanges shows that substantial economies of scale can be achieved in the trading function, while this advantage is less pronounced for the other functions of the stock exchanges, cf. Markku Malkamäki, Are there economies of scale in stock exchange activities?, Bank of Finland, *Discussion Papers*, 4/99.

led to greater competition in the stock-exchange area since other parties besides the traditional stock exchanges make trading systems available.

Internationalisation

The stock-exchange market is characterised by increasing internationalisation. The technology has made cross-border trading possible and simple, while deregulation has provided the basis for exploitation of these opportunities. The EU Investment Services Directive, ISD, has provided market participants with the opportunity for remote membership of stock exchanges abroad and the stock exchanges can now establish electronic access abroad.

The internationalisation of the stock-exchange environment has also been driven by the demand side, in particular via the investment behaviour of institutional investors. In view of the growing volume of pension savings the role of the institutional investors is of increasing importance to the development in the stock-exchange area. Investors' portfolios are subject to greater diversification with a view to higher returns. The investments are diversified into several different types of securities (stocks, bonds, etc.), sectors and especially nationalities. This has also increased the institutional investors' focus on trading costs, thereby exerting downward pressure on stock-exchange trading costs.

The introduction of the euro has acted as a strong catalyst for this development since investors can now spread their investments on several countries without assuming any exchange-rate risk. This has been particularly important to institutional investors which are typically subject to placement rules restricting the volume of investments denominated in foreign exchange.

The network effect – the advantage of being first and largest

Technological development and increasing internationalisation have intensified competition in the stock-exchange area, while the advantage of being first/largest in the market has probably served as an impediment to competition.

Generally, it is an advantage to the users of a trading system that it has several participants. This is because the liquidity in the system is assumed to increase with the number of participants. This means that investors can trade at lower spreads, buying and selling without the price of the securities being adversely influenced from the point of view of the investor. Thanks to the positive effect of many participants in the same system (network effect), the investors tend to use the large, well-established marketplaces.

The traditional stock exchanges have enjoyed the advantage of being first in the market. At the same time, substantial establishment costs have impeded competition. In view of these conditions the traditional stock exchanges have not always had any great incentive to introduce new technology and to develop in accordance with customers' requirements. For example, the largest stock exchanges were the last to introduce automatic trading systems to replace floor trading. On the largest US stock exchange, the New York Stock Exchange, floor trading continues to be an important element in trading.

CONSOLIDATION OF THE STOCK-EXCHANGE MARKET

The pressure from investors for lower trading costs (both directly and indirectly as smaller spreads), improved liquidity and immediate access to international trading has turned these factors into some of the most important parameters of competition. In Europe, the traditional stock exchanges are seeking to meet these demands by establishing cross-border cooperation.

Cooperation: alliances and mergers

Stock-exchange cooperation can be either an alliance or a merger. Until recently only stock-exchange alliances have been formed in Europe.

One of the most widely discussed alliances was established in July 1998 between the London Stock Exchange (LSE) and Deutsche Börse as a common trading platform for European stocks. The general recognition of the advantage of being first in the market quickly induced other stock exchanges to look for, and find, partners for cooperation. This was the start of the race to be the first to achieve a sufficiently large customer base (critical mass).

In May 1999 the London/Frankfurt cooperation was expanded to include six other stock exchanges.¹ The eight stock exchanges announced their intention to launch a pan-European exchange in November 2000. However, there have been problems with this cooperation. It was not possible to agree on a common integrated trading system, but only on mutual access to the existing trading systems of the individual stock exchanges. Moreover, several members of the alliance have alternative plans: in March three alliance members – Paris, Brussels and Amsterdam – announced their intention to merge into one stock exchange with a common trading system under the name of Euronext. In May the stock exchanges in London and Frankfurt followed suit by announcing their plans for a merger under the name of iX, also with a common trading system.

¹ The stock exchanges of Paris, Amsterdam, Brussels, Madrid, Milan and Zurich.

In the Nordic region the Copenhagen Stock Exchange and the Stockholm Stock Exchange in 1998 concluded a cooperation agreement on the establishment of a joint Nordic securities market – NOREX – for all types of securities. The Nordic alliance is based on a common trading system, SAXESS. At present only stocks are traded in this system, but as from autumn 2000 it will also be possible to trade bonds. The aim is for additional Nordic and Baltic stock exchanges to become part of this cooperation. The stock exchanges in Norway, Iceland and the three Baltic states have announced their intention to participate.

Perspectives

As yet there is no clear picture of Europe's stock-exchange environment in the future. As stated, there have been many announcements and declarations of intent concerning cooperation, but the major concrete steps forward have not yet been taken. Cooperation is important to utilising economies of scale. In this way trading costs can be reduced and liquidity increased. Against this background the continued consolidation of the stock market can be expected.

To begin with, the consolidation is expected to concern the trading function, which is especially subject to economies of scale. In this connection the establishment of a common integrated trading system has been emphasised as an important parameter for the success of cooperation. Such cooperation will probably to a greater extent than mutual access to the trading systems of the individual stock exchanges be able to utilise potential economies of scale.

In accordance with the considerations of economies of scale the establishment of a common trading platform has been a central issue in the stock-exchange cooperation initiated so far. The alliance between the eight European stock exchanges has not been able to agree on a common trading system. The decision-making process in an alliance can easily become ineffective. This may be reflected by the merger of three of the alliance members into Euronext, and of two alliance members into iX. However, the NOREX alliance is a good example of how development can take place within alliances. One advantage of an alliance is that it is better able to accommodate European diversity regarding for example habits, languages and legislation. Furthermore, alliances can ensure that stock-exchange trading continues to have a national dimension.

The second main function of the stock exchange, the listing of companies, is probably less subject to economies of scale than the trading function.¹ At the same time, especially for small, nationally-oriented com-

¹ Markku Malkamäki, cf. previous footnote.

panies, the monitoring of the stock-exchange-listed companies and the management of the information published on the stock exchange require familiarity with the region and personal contact with the companies. Stock-exchange listing is therefore not expected to be subject to the same degree of consolidation.

Overall, a picture emerges of a stock-exchange environment characterised by a "principle of subsidiarity":¹ The trading function, which is characterised by economies of scale, will probably be centralised in a small number of large stock exchanges, if not in one single European stock exchange. On the other hand, it is likely that the stock-exchange listing of small companies in particular, which is best achieved on a regional basis, will continue to be decentralised.

COMPETITION BETWEEN OLD AND NEW

The alternative trading systems compete with both the stock exchanges and securities dealers. In the area of order routing the new automatic systems compete with the original securities dealers. They have introduced electronic systems in only a few cases.

Can the stock exchanges meet the competitive challenge?

As stated, the alternative trading systems offer trading in securities listed on a stock exchange in an electronic system whereby investors' buy and sell orders are matched at prices generated in the system. A precondition for the existence of the alternative trading systems is thus the listing of the stock. The alternative trading systems are in this respect dependent on the output from the stock exchanges and in their present form are therefore not a serious competitor to the stock exchanges. The issue of interest here is rather the extent to which the alternative trading systems will be preferred.

The alternative trading systems which are becoming established in Europe are intended to create a European platform for trading in European blue chips and/or bonds. Their success will depend on whether the stock exchanges offer the same product, and on whether it is offered at competitive prices. So far none of the stock exchanges' initiatives have resulted in the establishment of a common European platform. However, if this is achieved before the alternative systems gain a footing, the liquidity will be concentrated at the stock exchanges and it will be considerably more difficult for the alternative trading systems to attract busi-

¹ The principle of subsidiarity is a concept in the EU Treaty whereby decisions are made as close to the citizens as possible.

ness, cf. the previous consideration of the network effect. However, EuroMTS has already attracted a proportion of the bond trading volume, and it can be difficult for a European stock-exchange alliance to win back this volume.

The alternative trading systems may not necessarily be able to offer significantly lower trading costs than those prevailing on the European stock exchanges: in the USA part of the explanation for the success of the alternative trading systems is that they have been able to offer electronic trading, while e.g. the New York Stock Exchange continues to conduct floor trading. A survey of conditions in the USA has shown that trading via an alternative trading system is generally associated with lower costs than traditional trading.¹ The European stock exchanges have made more progress in introducing electronic trading systems. This indicates that they will be better able to compete with the alternative trading systems than the US stock exchanges.

In a situation where the European stock exchanges offer a shared platform for cross-border trading there will probably still be some scope for the alternative trading systems. This is because the latter to some extent also offer other services than the traditional stock exchanges. For example, ATS offer anonymity vis-à-vis the counterparty, which is not always possible on a stock exchange. Anonymous trading may lead to a better price, especially for large transactions.² In addition, an ATS typically accepts institutional investors as members, whereas the stock exchanges have traditionally applied more restrictive membership principles.³ One of the arguments in favour of limiting access to a stock exchange is that the members must be willing to accept each other as counterparties.

Institutional investors can be expected to resort to ATS for a proportion of their trading activities. By trading directly in the marketplaces without the intermediation of securities dealers they achieve greater independence from external parties and at the same time can make savings.

The changing role of securities dealers

So far the securities dealers have bought and sold securities on behalf of the investor, and also offered consulting services. This role can be expected to lose significance, but it is not likely to disappear entirely.

¹ Ian Domowitz and Benn Steil, Automation, Trading Costs, and the Structure of the Trading Services Industry, *Brookings-Wharton Papers on Financial Services*, 1999.

² It appears from an analysis of the Italian trading system for government bonds (MTS), which introduced anonymity for bids/offers in July 1997, that anonymity is less cost-intensive for large transactions, cf. A. Scalia and V. Vacca, Does Market Transparency Matter? A Case Study, Banca d'Italia, *Temi di discussione*, number 359, October 1999.

³ An amendment to the Danish Securities Trading Act has just been adopted. It enables a stock exchange to give institutional investors access to trade directly on the stock exchange.

Insofar as ATS take over trading from the stock exchanges the securities dealers will risk that they are no longer used as intermediaries in connection with buying and selling securities. This disintermediation, which can also be observed in other areas of the financial sector, will probably reduce the core business of the securities dealers. However, a professional intermediary will still be required in many cases. Firstly, as yet there are no other trading platforms for private investors. Secondly, in view of the credit risk associated with trading with private investors in particular, a central counterparty which takes responsibility for the completion of the transaction will still be required.

The extent to which the need for a professional intermediary to ensure completion of transactions will be fulfilled by new automatic order routers or by traditional securities dealers will very much depend on whether the latter succeed in establishing similar automatic systems.

To many investors there is no longer a natural connection between consulting and the completion of a transaction. To these investors, automatic order routing is the obvious trading method. However, continued demand for consulting from some investors can still be expected. In view of today's constant flow of information and the development of increasingly more complex products there will still be a need for a specialist function for collection, management and especially interpretation of information.

OWNERSHIP STRUCTURE OF THE STOCK EXCHANGES

The increased competition intensifies demands on stock exchanges to show adaptability and profitability. It is important for the stock exchanges to be structured to make the right strategic decisions and thus achieve satisfactory earnings. Many stock exchanges are or have been owned by a fund – and this structure often entailed that ownership was equivalent to membership, leading to an inappropriate decision-making process.

The importance of ownership structure can be illustrated by comparing Eurex and LIFFE (London International Financial Futures and Options Exchange). Eurex is an electronic derivatives exchange established in 1998.¹ Eurex has already overtaken LIFFE as the largest derivatives exchange in Europe. One explanation might be that LIFFE has taken too long to adapt to market conditions and introduce electronic trading, which in part can be attributed to an ownership structure whereby ownership and membership are equivalents.

¹ Eurex was originally established as a merger between the derivatives segment of Deutsche Börse and SOFFEX, the derivatives segment of the Swiss stock exchange, but the Eurex trading platform is now also used on the Finnish stock exchange. Eurex has recently announced that they intend to form a transatlantic alliance with CBOT (Chicago Board of Trade) in 2000.

The significance of ownership structure has led many stock exchanges to restructure as limited liability companies in recent years. Examples are the stock exchanges in Stockholm (1993), Copenhagen (1996) and Amsterdam (1997). The London Stock Exchange and Deutsche Börse will be restructured in the spring of 2000, and the Oslo Stock Exchange is expected to follow suit during 2000.

The Copenhagen Stock Exchange was restructured as a private limited liability company in 1996 when the stock-exchange monopoly was lifted (Stock Exchange Reform II). The background to the reform was *that* direct influence by ownership on the management is achieved, *that* the group of owners can be matched more flexibly to the development, *that* the owners will have greater responsibility with regard to the development of the marketplace, and *that* cross-border cooperation can be established more easily. Had the Copenhagen Stock Exchange not been restructured it would therefore hardly have been possible to opt for participation in the NOREX cooperation. The decision was taken at an important time and was at the forefront of the trends now prevailing in the rest of Europe.

The restructuring of a fund-owned stock exchange as a limited liability company is a fundamental prerequisite to creating a dynamic stock exchange. However, the ownership composition is not without significance. If there is still considerable accordance between owners and members there is a risk that it will still be difficult to implement decisions contrary to the immediate interests of certain owners.

SUPERVISION AND REGULATION OF STOCK EXCHANGES

The development in the stock-exchange area presents new challenges to the supervisory authorities. Firstly, a network-based, international stock-exchange market is more complex and thus more difficult to monitor. Effective supervision therefore requires closer cooperation between the national supervisory authorities. Secondly, stock-exchange regulation must be adapted to consistently accommodate the wide range of old and new trading opportunities.

European cooperation

In 1997 the European supervisory authorities established the Forum of European Securities Commissions (FESCO) with the purpose of ensuring the fair and effective implementation of the single market for financial services. A high degree of harmonisation is achieved by issuing guidelines and standards which the members are obliged to implement at national level. Standards are issued for new areas as well as areas already subject

to Community law. In the latter case the standards can ensure the uniform implementation of directives. Via cooperation FESCO contributes to more effective cross-border supervision.

Regulatory delineation of stock exchanges

The *regulatory delineation* of a stock exchange is stipulated under the present legislation, but it is difficult to establish a clear distinction between stock exchanges and ATS on the basis of function. EuroMTS, cf. Box 1, and the national MTS are cases in point. In some countries the national MTS are registered as stock exchanges, and in others as investment trusts.

In many countries securities trading legislation has a two-tier approach: a company offering functions related to securities trading will *either* be regulated as a stock exchange and should fulfil capital requirements, etc., *or* as an investment company¹ subject to less stringent requirements. The emergence of ATS therefore makes it necessary to assess whether the alternative trading systems sufficiently fit into the existing set of rules – and if so in which respects – or whether adjustments are required to ensure a level playing field.

The USA is the first country to explicitly consider the regulation of alternative trading systems. In the USA an ATS itself can choose to be registered as a stock exchange or as a broker-dealer while *simultaneously* fulfilling supplementary requirements which to a certain extent correspond to the requirements of a stock exchange. Box 2 presents a brief introduction to the US "Regulation ATS".

So far there has been no need for regulatory measures in Europe, but an assessment of the current rules will also be necessary at European level if the current development continues. At national level the debate is slowly gaining momentum in the UK: in January 2000 the UK supervisory authority, FSA, submitted a proposal for the regulation of stock exchanges and trading systems to all interested parties for consultation.² At the European level FESCO, cf. above, has established a group of experts to investigate alternative trading systems. The European Commission's action plan for financial services includes several issues which are either directly or indirectly relevant to the stock-exchange area.³ There is thus no doubt that the regulation of ATS is on the agenda in Europe in the coming years.

¹ The terms investment trust, broker-dealer and investment company cover the same type of enterprise, but appear in the legislation of the EU, the USA and Denmark respectively.

² The FSA's approach to regulation of the market infrastructure, January 2000, is available on the FSA's Web site www.fsa.gov.

³ In October 1998 the European Commission issued the communication: Financial Services: Building a framework for Action. On the basis of this communication in May 1999 the Commission issued an actual plan of action. Further information is available on the Commission's Web site at www.europa.eu.int/comm/internal_market/en/finances/actionplan.

The USA is the first country to consider explicitly the regulation of alternative trading systems. In December 1998 the federal supervisory authority on the US market, the Securities and Exchange Commission (SEC) adopted "Final Rules on the Regulation of Exchanges and Alternative Trading Systems" (in the following called Regulation ATS) which applies to the regulation of alternative trading systems. Under the new rules an ATS can choose whether to be registered as a stock exchange and thereby subject to regulation according to the existing rules, or to be regulated as a broker-dealer, with simultaneous compliance with Regulation ATS. However, the exception is made that the SEC may require registration as a stock exchange if the trading system is a market of such magnitude that this is in the interest of society.

Regulation ATS defines an alternative trading system as a system which only stipulates rules and either offers a marketplace, i.e. facilities for bringing together bids and offers, or offers functions related to those of a stock exchange. It is explicitly stated that internal order books are not covered by the definition of an ATS. Regulation ATS sets the following requirements:

- The ATS must be registered as a broker-dealer.
- Operation and adjustment of the ATS must be notified to SEC.
- SEC must be assisted in connection with examination of the activities of participants.
- A mandatory transaction register must be prepared.
- Regular trading reports must be submitted to SEC.
- Trading information shall be confidential.
- The word "exchange" must not be included in the name of an ATS.
- Market transparency.
- Fair and equal access to ATS.
- Standards for system capacity, integrity and safety.

Alternative trading systems in which one paper accounts for more than 20 per cent of turnover must meet all 10 requirements. Medium-sized systems in which one paper accounts for more than 5 per cent of turnover must meet the first 8 requirements. Small ATS with less than 5 per cent of the turnover in all securities traded in the system must meet only the first 7 requirements. For further information see www.sec.gov/rules/finrindx.htm.

CONCLUDING REMARKS

The technological development, together with deregulation and the internationalisation of the stock-exchange market, have intensified competition in the area. This competition has required structural adjustments and the European stock-exchange market has not yet found a new equilibrium. The fact that many major investment banks are shareholders in several of the new companies shows that the future market structure is difficult to predict, so that at the moment bets are hedged. However, on the basis of the factors which have contributed to influ-

encing the development it is possible to point out possible scenarios for the coming years.

The continued consolidation of the stock exchanges must be expected, with emphasis on utilising economies of scale in the trading function. This requires agreement among the stock exchanges to establish a common integrated trading system. A prerequisite for cross-border cooperation is that the national stock exchanges are structured as limited liability companies. It must therefore be expected that the stock exchanges which have not yet been dematerialised will be so in the near future.

The alternative trading systems are expected to be of a certain scale. However, they are not expected to be as successful in Europe as in the USA. The European stock exchanges have come far in the introduction of electronic trading systems, and are expected to be in a stronger competitive position vis-à-vis ATS than was the case for the stock exchanges. The role of the securities dealers will probably be affected by the competition to a greater extent, but the consulting function will still be required, in view of the greater complexity of the market.

As a consequence of internationalisation, national supervisory legislation is no longer adequate. In the coming years the supervisory authorities will face the major challenge of finding a regulatory set-up which ensures continued development, a level playing field and protection of the investor.