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MODERN COMMUNICATIONS METHODS AND COMPANY LAW

The development and application of new information technologies was confirmed by the European Parliament resolution of 12 June 1997 as being an important pan-European task. Parliament called on the Commission to examine in detail the opportunities offered by the Internet, including in its use by small and medium-sized enterprises (SMEs). Communication with third parties for commercial purposes ("electronic commerce") or for internal rationalisation is, however, not the subject of this paper, nor do I intend to deal with the rapid growth of electronic banking or electronic brokerage. I intend to examine what effects the new technologies have or might have on the structures and conditions of company law. A certain amount of speculation is inevitable in a work programme of this nature, which links legal and legal policy considerations to a rapidly progressing technical process.

A. BASICS

I. COMMUNICATIONS METHODS

The predecessors to the stock corporation were - alongside the Banco di San Giorgio in Genoa (1407) - the trading companies of the 17th century, in particular the Dutch East India Company.[1] The share corporations of the 19th century are regarded as organisations designed to attract capital in connection with the development of the railways. Communication within these companies has no particular significance from the company-law point of view. It was limited to the

bothersome exchange of documents or to personal contact between the various parties, which were normally from within the same region.

Company laws, particularly as far as their provisions on the taking of decisions, are based on the experience of the last century. There was no reason to change the orientation towards physical presence and writing given the communications methods which have been customary throughout most of this century. Neither the development of individual communications (telephone, fax) nor that of mass communications (television, radio) have led to a change in approach.

On the basis of digital technology, new means of communication have been available in recent years. On the one hand, digitalisation is revolutionising existing media (ISDN, digital television). But on the other, the world of digital communications, which has been rapidly expanding since the 1980s, is leading to the development of new media which lies somewhere between bilateral communication and broadcasting. These are the computer-based on-line services, which are in principle turning everybody into a sender and a recipient of the broadest possible impressions (so-called multimedia). These on-line media have in recent years reached beyond the circle of computer buffs. The Internet, as a network of networks, has emerged as a global communications medium which is widely accessible via any telephone connection in the world. After barely five years in existence (except in universities and the military), one might risk the assertion that this world-wide network has established itself alongside the printed word and broadcasting. This paper is based on the latest state of Internet technology, whereby one has to remember that three months are an Internet year!

The constant improvement of communications media has hitherto had no or only marginal[2] effect on company law. The question is whether this indifference vis-à-vis a rapidly changing communications structure is tenable. On the one hand, modern technology is generally used to rationalise information flows (e.g. registration). A much

harder and at present unanswerable question is what structural changes will the potential of digital communications media mean for corporate governance. There is no room or need here to go into the relationship between law and technology. But I wish to say just one thing: law can stand in the way of novelty but will not prevent it if people see it as useful in its own right. Law should courageously take novelty up and help it on its way.

II. STATUS QUO AND DEVELOPMENT

As everybody is aware, telecommunications have primarily revolutionised business markets, and above all the financial markets. The turbulences on the Asian stock markets 1997/1998 have shown what globalisation means on the cross-linked capital markets. The strong increase in the importance of liquid capital markets has, in turn, had a strong influence on company law. The first, but still very general result is that modern communications technology has an indirect (i.e. via the capital markets) influence on financial and organisational law as it affects businesses. The direct influence will be analysed below.

The phenomenon of communication appears in company law in several connections. Within any company, decisions have to be taken. This per se involves communication, whether they are taken by the general meeting or the managing bodies. In order to decide whether or not to become or remain a member of a company, information is needed. The communications methods used hitherto to meet these needs are: official registers for particularly important matters, written and oral reports. The people to which they are addressed and the way in which they are effected vary considerably according to the circumstances. There are internal reports which are intended solely for one company body (e.g. the managing board's report to the supervisory board; Section 90 of the Aktiengesetz [Stock Corporations Law], hereinafter referred to as "AktG"); then there is information which must be available to all members or, by means of entry in the companies register, to the general public.

Modern communications methods are certainly of utmost importance to the supply of information, but they also have a major role to play in administration. The company can use the Internet for the purposes of presentation, but it can also use it for its business and investor relations. A member with an interactive terminal (PC or, in future, a digital television set with a reverse channel) can, at any time and without prohibitive cost, take part in virtual meetings ("on-line general meeting", see section B below). Potential investors are able to make comparisons and rational assessments on the basis of on-line information provided by the firm.

B. FIELDS

I. INFORMATION ON THE COMPANY

The importance of information concerning the company has been acknowledged in European company law since the very beginning. The harmonisation which has been introduced on the basis of Directives has been concerned with registration, disclosure of accounts, ad hoc disclosure, and reports in the event of specific occurrences within the company. It was not until these sensible and widely accepted Directives came into effect that there was a high level of information penetration within companies.

The US Securities and Exchange Commission (SEC) has long applied the principle of "disclosure, again disclosure and yet more disclosure" vis-à-vis listed companies. In the field of transparency requirements on capital markets, the United States are the world leader. The EU can and must take action in this area to make Europe an attractive and competitive financial market. Regulatory measures should, from the outset, take account of the new technical possibilities of communication and interaction with investors.

1. REGISTRATION

The introduction of company registers for joint-stock companies is a requirement of the First Company Law Directive of 1968 (Article 3(1)). The minimum requirements as to what this register must contain and, in particular, the effect on third parties are regulated in detail by this Directive. Supplementary provisions were laid down by the Eleventh Directive of 1989.

The Fourth Directive (1978) dealt with the publication of annual accounts, which should be understood to mean their presentation to the registration office and publication in an official newspaper.[3] The purpose of this Directive was to guarantee a minimum standard of seriously documented information on the company's foundations, interests and financial situation for the protection of members and third parties (cf. Article 54(3)(g) of the EC Treaty).

a) Electronic registers

Registers are, in computer jargon, nothing other than data banks. They have fallen within the classic domain of data processing since the time of punch cards. It is in fact to be expected that company registers should largely be processed electronically and interested parties should be able to consult them on-line.

However, this is unfortunately not the case in Germany. There are several reasons for this, the most important one probably being cost. Conversion to computerised registers is expensive. But also tradition and the conservative inertia of a judicial system which does not operate on the services market have also hampered electronic innovation. Moreover, the intensive discussion on the misuse of data which was popular in the 1980s as a reaction against the possibilities offered by computers has given rise to a "wait-and-see" approach.

Nevertheless, for about four years there has been a provision in the German Code of Commerce to the effect that the register may be kept "in machine form as an automated file". New entries are effective as soon as they have been irrevocably added to the data store. Written documents, such as articles of association and annual reports need no longer be entered in paper form but can be stored as an "image or data carrier".

Other EU Member States are more advanced in this field. In Italy, Infocamere, an information service company of the Italian chambers of commerce which is responsible for the Business Register, operates a data bank covering 5 million businesses. In Denmark there is the Publicom system, in the UK Mercury Communications, and in France the Institut National de la Propriété Industrielle.

b) On-line retrieval

Electronic collection and processing would only be a partial rationalisation if it were not to lead to data being readily available to the legal and business world. We do not need to stop at transitional technology such as the storage of data on CD-ROM. It is now possible for operators to access up-to date information from registers directly. Registers must be able to be consulted on-line.

In Germany, legislation already exists to make this possible, though with so many obstacles that one can no longer speak of on-line access. The "automated procedure" provided for in Section 9a of the Code of Commerce is subject to a twofold limitation. Private persons may only consult the register on-line if they have "justified professional or commercial interests". This is inconsistent with the above-mentioned First Directive. An objective restriction is created by the fact that only entries and not articles of association or annual reports may be consulted on-line. There is doubt here whether this is consistent with the First Directive, too.[4] It is difficult to understand why it

is possible to obtain a copy of entries and written documents[5] but not a print-out in the context of an on-line consultation.

The United States are way ahead in this respect. There, the EDGAR (Electronic Data Gathering, Analysis and Retrieval) system has existed since May 1996. This data bank, which may be consulted via the Internet,[6] contains all the documents which public companies are required to submit to the SEC. The proclaimed goal is to raise the effectiveness and fairness of the capital market to the benefit of investors, business and the national economy. One disadvantage is that the annual report to shareholders need not be presented to EDGAR in full but only as a summary of its main points. Particularly important to the capital market is the up-to-the-minute information on company and financial events within public companies.

c) Reforms

The market for business information in Europe was valued in a study by Frost & Sullivan at ECU 1 billion in 1992 and more than ECU 2 billion in 2000. After economic news, company information is one of the most sought-after items. The study on company information in Europe published by DG XIII[7] sums it up: current and reliable information on firms, being listed or not, in all Member States is necessary for the completion of the single market and for the free movement of persons, goods and capital and the freedom to provide services.

The First Company Law Directive of 1968, which is authoritative on this matter, lays down a system of disclosure but does not indicate the details of how it should be organised (i.e. centrally or on a decentralised basis) or of what technology should be used to operate it. Work took place at European level between 1992 and 1994 to develop a European Business Register (EBR).[8] The countries involved were Denmark, France, Italy and the United Kingdom. The project was successfully completed and led to creation of an on-line system

between the bodies responsible for the register. Twelve Member States are now involved (the original four plus Spain, Portugal, Belgium, Greece, Sweden, Finland, Norway and Austria).[9] The ambitious aim is to set up a pan-European service, for which users will be required to pay supplying business information in a functional and user-friendly form on the basis of existing national registers. In particular, this will make the crossborder activities of SMEs much easier because the high costs of obtaining information will disappear. This European electronic business register is clearly a major step forward. The availability of on-line consultation at any time and without restriction will provide a powerful impetus. A German limited company would be able to check the credentials of a Finnish company with which it wishes to enter into business relations without lengthy research.

However, a further step should be taken. The First Directive states that publication of the data which must be contained in the register must occur in a nationally available printed medium.

It is said in Germany that "nobody reads the Federal Gazette over breakfast". Businesses obtain information, if they do so at all, on the basis of a second publication in a local newspaper or in a circular letter from the chambers of industry and commerce. This practice, based on the duplicate or triplicate use of paper media, is costly. Above all, it is unreliable because it is led by the notion of local or regional activity. This is more in line with the nineteenth century than with the present.

Publication in a newspaper will not be necessary in future. The 1968-Directive needs, after thirty years, to be adapted to technical progress. It is sufficient for publication to take place on an easily accessible website operated by the registration institution. This procedure would have significant benefits for users because modern Internet technology allows the desired data to be retrieved at any time using a search engine. The on-line user would still have to take the initiative,

which he often sees no reason to do. It must therefore be ensured that he is automatically informed of amendments. This could be done using the "push technology" incorporated into the latest Internet browsers.[10] This enables a business to subscribe to the website ("channel") and be automatically (and, if desired, selectively) informed of amendments, including new entries.

2. DISCLOSURE

a) Special disclosure

An essential area of disclosure to which the EU has rendered outstanding service is that of the requirement that a company issue special reports where it undergoes significant change from the point of view of company law. These reports from the board of directors are required in the event of a change in status (merger, division, change in company form), an increase in capital where there is no subscription right on the part of existing shareholders, the conclusion of business contracts, and, in future, a transfer of registered office (proposal for a 14th Directive).

In addition to being displayed on the premises of the company, these special reports could also be included on the website to which all shareholders who are able to establish their identity have access. The provision of a copy (e.g. Section 293 II AktG) could be replaced by an e-mail attachment: the company would send shareholders registered with it or who so request a file containing the report in question (unless the website can be printed out, as is usually the case). The advantage of electronic display is not least that a link with other resources is possible. For example, a report which goes beyond the data required by law may refer to further material available on the website. A normal paper report would be too bulky and complicated for this.

b) Ad hoc disclosure

The Internet is also useful for announcements falling under the category of ad hoc disclosure. The requirement for capital-market purposes that important facts relevant to share prices have to be immediately published is necessary in order to ensure that investors, shareholders and creditors have access to up-to-date information. They should not be required to wait until publication of the next interim report. Ad hoc disclosure also serves the purpose of preventing insider dealing by ensuring that information is disseminated as quickly as possible.

This specific information goes back to Article 17 of Directive 79/279/EEC coordinating the conditions for the admission of securities to official stock exchange listing. This requires publication in a newspaper, but also provides for publication "by other equivalent means approved by the competent authorities". The annex to the Directive (Schedule C, point 5) indicates as being subject to this requirement "any major new developments in its sphere of activity which are not public knowledge and which may, by virtue of their effect on its assets and liabilities or financial position or on the general course of its business, lead to substantial movements in the prices of its shares".

The German lawmaker considered one equivalent means of publication to be an "electronically operated information-dissemination system". Anybody who thinks that this means the Internet will be disappointed. The relevant law was drafted in 1993/94, i.e. at a time when the Internet in the form of the World Wide Web which has been opened up by modern browsers was still in its infancy in Germany. It was not only the fact that the legislative process and technological change progressed alongside each other. The lawmaker also considered it sufficient if this "information-dissemination system", which had existed for some time, was only available to professional circles. It was enough to create a "partial public" consisting of mainly profes-

sional share traders and investors.[11] It was thought that the information would then be incorporated into business plans with the consequence that share prices are accordingly affected.

This situation is untenable. Directive 79/279/EEC requires information to be made available to the "public". This has hitherto been possible solely through the medium of newspapers. The said electronic information systems (e.g. Reuters) are generally too expensive for private investors.[12] By contrast, the Internet is a relatively low-cost alternative. It is technically feasible to put this ad hoc information onto the Internet. One has to consider that there is a growing number of members of the public who take an interest in share prices who do not deal for primarily professional reasons but who are nevertheless not insignificant players on the capital market. This group of people, who fall somewhere between savers and institutional investors has hitherto been blatantly disadvantaged. Nowadays, stock exchanges (both electronic ones and those requiring a physical presence) enable trading to be conducted in the smallest of amounts. Banks specialise in electronic brokering services. Private individuals have the opportunity to trade directly on the stock market. Modern communications allow them to act on the securities markets on a par with institutional investors, with purchase and sale in variable trade on the same day (intra-day trading).

A special problem is the dubious insider status of analysts. In these times of shareholder value and investor relations, increasing numbers of public limited companies are presenting their business to analysts of banks, brokers and investment funds. These people directly or indirectly determine by their recommendations the short-term share price. There is currently a debate in Germany as to whether these analysts should be treated as so-called secondary insiders with the consequence that they should refrain from share dealings until such time as an ad hoc publication has taken place. Some companies help analysts by publishing the result of the

presentation meeting on the Internet[13] on the day it occurs so that public availability of the information is established.

c) Disclosure of shareholders

A further concern in the field of the law governing companies and the capital markets is the establishment of transparency regarding company shareholdings. Since 1988 there has been a Council Directive on the information to be published when a major holding in a listed company is acquired or disposed of (88/627/EEC).

Notification is required where the proportion of voting rights held by a given person or legal entity reaches a threshold of 10% (Article 4). However, EU-Member States may impose stricter requirements (Article 3). In Germany the threshold is as low as 5% (Section 21 of the Securities Trading Law). The newly created Federal Supervisory Office for Securities Trading receives notifications, sorts them and enters them into a data bank which can be consulted on the Internet. This data bank, which may be consulted in Excel or ASCII format, allows data to be sorted according to company or person liable to submit a notification. Obtaining this information was previously very expensive and uncertain. Various compendia had to be used, such as "Wer gehört zu wem?" [Who owns what?], published by the Commerzbank, in order to obtain an idea of company ownership.

If commercial registers are also available on-line, both sets of information can be combined. It has hitherto meant very little to know that 70% of the shares belong to a holding company XY. Only with information on the shareholders of that company can one gain a precise idea of the situation. The development of a group register is necessary in order to shed light on group relations which can sometimes remind one of the Florida marshes.[14] This is in any case true for states which have a codified body of law governing groups of companies (Germany, Portugal). In particular, computers lend themselves well to the registration and depiction of cross-shareholding[15].

But in other states too it would be good for legal relations if links between companies could be made transparent.[16] An electronic medium is suitable because of its "multimedia" (text, graphics) method of portrayal alone.

d) Disclosure of the balance sheet

A company's annual report must be submitted to the registration authority and is available for consultation by the public. This is clearly not considered sufficient because the Consultation Paper for Company Law of the EU-Commission (XVD2/6017/96-DE, 17.12.1996) asks for comments concerning the proposal that a summary of the annual accounts is automatically sent to the shareholders, while they are still able to consult a detailed analysis on request at the company's head office.[17]

Reactions to this question have generally been in the affirmative, though some fear that the cost to the company will be too great. There is no need to worry about costs if modern communications technology is used. Electronic provision and transmission are, as indicated above with regard to special reports, no problem. There is also no need for the formal distinction between summary and detailed report. Both versions can be consulted on the company's website so that the shareholder can decide how much detail he requires. The rationalisation also has ecological advantages since it is no longer necessary to send out many thousands of paper copies.

II. MEETING PRACTICE

A major advantage of modern communications technology is the fact that it simplifies meetings. Until a few decades ago, meetings were the domain of the loudest speakers. Microphones largely did away with their advantage. Large meetings of shareholders now do not only use amplification equipment but also up-to-date presentation techniques: pictures or factual elements of the chairman's report ap-

pear on a large screen so that all participants have an equally good view, irrespective of where they are seated.

This comes into its own when, for want of space, a meeting has to be held in several rooms within a building. The picture and sound is then transmitted to the other rooms. From there it is no great step to transmitting them to other locations. However, there is legal uncertainty because laws relating to companies normally speak of the meeting being held in one "place".

1. GENERAL MEETING VIA TELECONFERENCING

The holding of General meeting using television and digital transmission technology, should be seen as significant progress. Many shareholders are put off attending a general meeting in another city for the good reason that it is time-consuming and costly. Low attendance at such meetings are continually being bemoaned because they give rise to arbitrary majorities or strengthen the position of large shareholders.[18]

The financial and technical conditions for holding a general meeting via teleconferencing can easily be met by large companies. Renting a satellite channel for a few hours should be affordable compared to the high cost of providing a large meeting hall.

It will certainly have to be permissible for meetings to be organised in this way in the case of the (planned) European Company. If a company of this type were truly pan-European, it would be unthinkable for shareholders in Helsinki to be required to attend a meeting in Palermo in order to exercise their rights of participation in person. It would be an important step forward in widening the decision making base to make it possible for the general "meeting" to be attended on a regional basis. The European Company Statute should accordingly make provision for this.

But not only for European companies: an effort should be made to ensure that general meetings can be held on the basis of teleconferencing also by national corporations. There are already many listed companies with a European or international shareholder structure. Teleconferencing would allow these shareholders to obtain a realistic opportunity to participate. A Directive based on Article 235 of the EC Treaty (completion of the internal market) could require Member States to recognise meetings held at the same time but in different places being linked by telecommunications as a "general meeting". This would be an appropriate response to the increasing internationalisation of capital markets.

2. ON-LINE GENERAL MEETINGS

It would be going much further if not only decentralised meetings were allowed but also individual interconnections between shareholders via on-line services were deemed to constitute a "general meeting".[19] This would involve moving away from the notion of a meeting in person between shareholders, which in any case is no longer consistent with the reality of general meetings.

Technology is not adequately developed in 1997 to enable undistorted and more or less natural visual communication to take place via the Internet. Only in partially closed networks with high transfer rates, e.g. the German Wissenschaftsnetz [science network], is this form of communication possible, and even then only under experimental conditions. However, it is to be expected in the next few years that the situation will considerably improve. Plans are afoot to create a "premium Internet (Internet II) or to use traditional television sets as an input medium, while the normally more data-costly reverse channel is managed using Internet technology.

One factor which at present militates against holding general meetings via the Internet is the considerable cost. Even if, as expected, the liberalisation of the telecommunications market in 1998 leads to

lower prices in Germany and other countries, the fact that meetings go on for hours will probably deter a not inconsiderable number of shareholders. However, there is no need to despair: latest developments mean that electricity cables could be used as a transmission medium so that it would no longer be necessary to use the telephone network.

One possibility is that firms will make use of the opportunities provided by digital television. There will in future be hundreds of television channels which could be used in a wide variety of ways. Large businesses already use in-house digital television for the purpose of training and internal presentations.[20] The board could appear on the shareholder's television screen, while voting could occur via the reverse channel.

Further consideration must be given to the details of on-line general meetings. The proceedings would naturally have to be observed by a notary. Shareholders could be identified by means of an electronic figure issued by the depository bank. This attests to the fact that the voter is a shareholder at the time the meeting takes place (this information is transmitted electronically to the company). Only a person using this figure as a password would be allowed to vote.

There would no longer be any need for the application and deposit deadlines (Section 123 II, III AktG) which allow the company the time to prepare a quorate meeting.[21] The list of participants would be drawn up on the basis of the passwords of the shareholders who have logged in and be published on-line. A debate would be possible without any problem using "chat" facilities. Beyond the experimental stage, although by no means widespread, is the exchange of sound and images via the Internet.

3. PROXIES

The appointment of a proxy has hitherto only been possible in writing (Section 134 III 2 AktG). By its very nature, this means of communication makes it impossible to react quickly to a change in circumstances. There are plans in Germany to allow letters of proxy to be sent in electronic form. This shift away from the written form is particularly important from a European point of view. There are often problems in informing foreign investors in good time and thereby allowing them to make arrangements for a proxy. One reason for this is the number of banks which must be involved before reaching the depository bank abroad. If transmission were possible electronically, a number of administrative restrictions would be overcome.

The problems of authentication are not as great as sometimes assumed. If a digital signature is supplied, the opposite party knows with whom he is communicating. The technology on which these signatures are based varies. A law has been on the statute books in Germany since August 1997 which regulates the matter of electronic signatures in the interests of legal certainty. The plan is that a neutral certification office will issue a digital signature to a person and confirm that it has been issued if an opposite party so requests.[22]

4. THE BOARD (SUPERVISORY BOARD/BOARD OF DIRECTORS)

German law does not lay down any specific procedure for decision-making by the board of directors of a stock corporation. For the supervisory board, however, the law is based on the holding of a meeting requiring physical presence, though absent members can vote in writing. Nevertheless, the possibility does exist of "taking decisions in writing, by telegraphic means or by telephone ... if no member is opposed to this procedure" (Article 108 IV AktG).

In France there is a draft law (based on the Marini Report[23]) under which a company's statutes could make provision for decisions by the managing board (conseil d`administration) to be taken using videoconferencing. At present, Article 100 of the relevant law of 1966 only allows decisions to be taken at a formal meeting involving the physical presence of all members at the same place. The draft will allow videoconferencing, but subject to two restrictions: a quorum of board members must be physically present at the same place, and particularly important decisions, e.g. appointment of the chairman, must be taken by a traditional meeting.[24]

The meetings of a company's managing and supervisory boards should be allowed to make use of modern communications. This means video or on-line conferencing. The fact that such boards are becoming increasingly international, with the consequence that their members are widely dispersed, also militates in favour of this proposal.

III. INVESTOR RELATIONS

A significant change will, under certain circumstances, occur to the relationship between shareholders and large "anonymous" companies as a result of modern communications. They will affect both the way a company communicates with its shareholders and the relations between individual shareholders.

Increased competition on the capital markets has led to the fostering of good relations with shareholders becoming an important component of modern business culture. Brochures and letters to shareholders over and above the required reports are not uncommon. This presupposes that the company is able to identify its shareholders, which is generally not possible in the case of bearer shares. This problem has hitherto been overcome by sending the material in question via the depository banks. Some companies even take the step of asking their shareholders for their address when the occasion

arises. For example, when launching itself on the stock market, Deutsche Telekom AG offered its shareholders various privileges if they registered themselves.

With the help of on-line technology, this process can be considerably simplified and rationalised. Companies could e-mail news to those shareholders having supplied an electronic address almost cost-free. More recently there has also been the possibility of setting up an Internet "channel". Changes to the company's website are automatically sent to the user (by means of "push" technology). For example, a press conference on the company's results could be documented on the Internet as it happens.

Communication between individual shareholders is no problem in the case of small businesses. By contrast, members of listed public limited companies are typically anonymous. This has structural consequences. For public companies with dispersed shareholders, the management will obtain a very powerful position for want of control by the company's owners.

The use of on-line technology is also suited to the preparation of the general meeting, whether it is organised on the traditional basis of physical attendance or on-line. Today, there are already privately operated bulletin boards at stock exchanges on which investors exchange their assessments of the state of the market and the companies operating on it. Companies should be encouraged to open up a bulletin board on the Internet concerning the main items of the general assembly. Shareholders could then indicate their positions in advance, which would make it easier for them to plan alliances than the existing system of more or less chance formations on the day of the meeting.

Points of contact with company law moreover exist with regard to takeovers. It is known that the European lawmakers are particularly

keen to introduce rules governing takeover bids. The most recent proposal for a Thirteenth Directive was presented in February 1996 and in November 1997. This gives EU-Member States the option of requiring a bidder to purchase all the shares by a specific deadline when the bidder is purchasing a certain minimum number of them. It might be considered whether a "counter" could be placed on the company's website so that external shareholders could see how many accept the bid. This form of transparency would avoid the prisoner's dilemma to which shareholders would otherwise be exposed.

IV. VIRTUAL COMPANIES

Virtual companies, which have so far existed more in the realm of futuristic management theory, might make it necessary to carry out significant changes to company law. They involve modular links between persons and institutions which cooperate with each other for shorter or longer periods depending on the business concerned. These forms of cooperation should largely be assessed purely in terms of the law of obligations or as a company governed by civil law (perhaps including the EEIG). However, there is a legal discussion which is as yet little developed as to whether and to what extent these networks of contracts should be deemed to be governed by company law, and in particular the law governing groups.[25] These ideas will grow in importance if "companies without walls" become more commonplace on the basis of modern communications technology. It should incidentally be pointed out that, for states which require worker participation on the supervisory board, the question will arise whether and on what terms teleworkers who are strictly speaking freelances should be regarded as employees.

An important aspect which can be stressed even now in the case of companies which communicate primarily by electronic means is the fact that the administrative head office is no longer of any relevance. If software developers in Düsseldorf and London join forces to create a GmbH or a limited company and generally take their decisions on

line, where is the company's head office? The company seat theory enshrined in international private law, which serves as an obstacle to mobility, vanishes into thin air for want of any means of defining it.

C. SUMMARY

I. 1. Company law and communications technology have hitherto had little to do with each other. Companies use the available technology for their transactions. However, their structure as determined by company law is not affected by the new information technology.

2. The capital markets influence the governance of open companies. The internationalisation of these markets is being prompted by telecommunications, to the effect that one can now speak of an indirect influence on company law.

3. Communication within companies is characterised by meetings requiring physical attendance by participants and written documents. The digital media, in particular the Internet, will prompt a revolutionary change to this situation. The law must create scope for the new opportunities of information and interaction without affecting companies' ability to function. Inconsistencies in the level of information which have hitherto occurred as a result of spatial or temporal proximity to events could be quickly eliminated.

II. 1. Meetings of shareholders and the management could make use of digital technology and in some cases be replaced by it. General meetings using teleconferencing (i.e. meetings in different places linked by video and audio transmission) should be permitted, particularly as far as the societa europea is concerned. On-line conferences via the Internet should also be made possible once technical standards have reached a satisfactory level.

2. General meetings could be prepared and the proceedings take place electronically. For the purposes of preparation, information could be supplied to shareholders via the company's website and opinions could be exchanged using Internet forum technology. Instructions and letters of proxy could also be issued electronically.

3. The anonymity and consequent impotency of shareholders could be partly overcome using the Internet. It will be easier to obtain quorums by means of on-line compilation of opinions, which companies are sometimes required to organise.

4. The entire business of registration and reporting should, without further ado, be dealt with via the Internet. Electronic registers and on-line consultation are already widely available in Europe (outside Germany). The 1968 Directive must be amended in order to make publication on the Internet possible.

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[1] K. Lehmann, Die geschichtliche Entwicklung des Aktienrechts bis zum Code de Commerce, 1895, p.29 et seq.; Zöllner, Einleitung zum Köner Kommentar zum AktG, 1985, note 56.

[2] For example, a company's board of directors is in principle permitted to take decisions by *telephone* (Section 108 IV German Aktiengesetz).

[3] Cf. Title of the fourth sub-section of the third volume of the Handelsgesetzbuch (prior to Sections 325 et seq. HGB), which gives a legal definition of "publication".

[4] Roth in Koller/Roth/Morck, HGB, 1996, Section 9a, note 2; Bundestag-Drucksache 360/93, p. 312.

[5] Article 3(3) of Directive 68/151/EEC.

[6] www.sec.gov/edaux/wedgar.htm;

[7] Information Market Observatory (IMO) of the European Commission (DG XIII): Company Information in Europe - Working Paper October 1994.

[8] www.ebr.org

[9] Germany's absence from this list is surprising. This is perhaps a result of its federal structure (business registration is a matter of the Bundesländer).

[10] Internet Explorer 4.0. (Microsoft) and Netscape Communicator.

[11] Explanatory memorandum to the Government draft for a Second Financial Market Promotion Law (Bundestag document 12/6679, p. 46).

[12] The television broadcaster n-tv disseminates via teletext ad hoc announcements supplied by the stockmarket information systems.

[13] Television broadcaster Pro Sieben: www.pro-sieben.de/boerse (according to a report in Wirtschaftswoche, 9.10.1997, p. 219).

[14] Zöllner, Festschrift Kropff, 1977, pp. 333, 341; U.H. Schneider, WM 1986, p. 181.

[15] Wastl/Wagner, Wechselseitige, Beteiligungen im Aktienrecht, AG 1997, p. 241; Adams, Ringverflechtung in der "Deutschland-AG", AG 1994, p. 148 (with two-dimensional diagram, p. 150).

[16] Lutter, Gedächtnisschrift Knobbe-Keuk, 1997, pp. 229, 240, points to the importance of disclosure for the group as a legal form of company link.

[17] In Germany the annual report must be displayed for consultation at the company's premises (Section 175 II AktG) and be submitted to the general meeting (Section 176 I AktG).

[18] A preferred solution in Germany is to entrust depository banks with the collection of ballot papers. This practice will remain in force after the reform of the law relating to public limited companies planned for 1998.

[19] Von Rosen, in: Feddersen/Hommelhoff/ Schneider, Corporate Governance, 1996, p. 299; Hocker, Das Wertpapier 1997, booklet 22, p. 16.

[20] For example, Deutsche Bank (Handelsblatt of 28.2.1997 and Wirtschaftswoche of 12.3.1998).

[21] With regard to the preparation of shareholder discussions moderated by the company on the Internet, see below.

[22] Law on the digital signature of 13.6.1997.

[23] Marini, La modernisation du droit des sociétés, Report to the Prime Minister, 1996, p. 47.

[24] Caussain, RDAI/IBLJ 1996, pp. 939, 945 (concerning approval of the minutes by fax).

[25] Oechsler, Die Anwendung des Konzernrechts auf Austauschverträge mit organisationsrechtlichem Bezug, ZGR 1997, pp. 464 et seq.; G. Teubner, Den Schleier des Vertrags zerreissen? Zur rechtlichen Verantwortung ökonomisch "effizienter" Vertragsnetzwerke, KritV 1993, pp. 367 et seq.