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THE EEC DIRECTIVE OF JULY 25, 1985 ON LIABILITY FOR DEFECTIVE PRODUCTS AND ITS APPLICATION TO COMPUTER PROGRAMS

The object¹ of the present article deals with the question of whether the 1985 directive on liability for defective products² applies to computer programs.

It might seem at first sight that the question is rather theoretical. It is true that before coming to an answer, one has to deal *inter alia* with issues such as qualification of software (as a product or as a service), with the nature of software (as being a tangible or an intangible item), etc.... However, the answer to this question will have a concrete influence on the scope of legal obligations of producers of software, since the purpose of the EC directive is *inter alia* to facilitate recourse by the victims against producers of so-called defective products, by imposing a regime of liability regardless of any fault upon those producers.

As will be explained, the scope of application of the directive is limited, notably regarding the type of damages covered. However, the Airbus crash near Strasbourg in 1992, about which it has been said that a problem in the airplane's computer system might be one of its causes, is an example where the principles of the directive could be held applicable, and where defective software can cause fatal accidents. The article is divided in two parts: the first gives a presentation of the directive, the second deals with its possible application to software. The same question may be asked about databases and about information as such; these questions will however not be dealt with in this article³.

PART 1: THE EEC DIRECTIVE OF 1985

SOME FACTS ABOUT THE DIRECTIVE

After many years of discussion, a European directive on product liability was adopted in 1985.⁴ As available figures indicate that as many as 40 to 45 million people are injured and 30 000 to 45 000 persons die each year in the Community due to what is sometimes called consumers' accidents⁵, the initiative taken by the European Commission should prove useful to those injured consumers.

By establishing a system of "liability regardless of fault" for producers of defective products, the Council Directive tries to achieve a balanced equilibrium between the interests of both consumers and producers. The idea behind its adoption is that even when the producers cannot be blamed for the damages caused (i.e. even if there has been no negligence whatsoever) it would be unfair for the victim to be left with no legal remedy. The solution of the directive is a provisional shift of the risks on to the producer; it is only provisional, indeed, because the producer should include the price of insurance in his

production costs, which are in turn included in the market price; so it is eventually the whole group of consumers of one type of product which bears the costs of an improved protection. The liability of the producer, as it is organized by the directive, is thus not based on negligence, nor does it depend upon the existence of a contract. The Member States had to introduce the directive into their national legal systems by July 30, 1988. In the United Kingdom for example, this was done through the Consumer Protection Act of 1987 (which the Commission considers not to be in conformity with the directive, and against which infringement proceedings have therefore been started); in Belgium, this was only achieved with the adoption of the law of February 25, 1991. In January 1993, only a few States, amongst which France, have not yet introduced the directive in their legislation. Following the **Francovich case** of the E.C. Court of Justice however⁷, even in these countries' national courts should compensate the individual who would find himself in a less favourable situation than if the directive had been introduced, and a remedy should then be possible against the Member State which did not fulfil its obligations deriving from Community law (regardless of any discussion on a possible direct applicability of the directive).

All along the discussions (which started in 1973), the "product liability crisis" prevailing in the United States has been used and abused to prevent the adoption in Europe of any system of strict liability. But many arguments may be used to demonstrate that the E.C. directive should not lead to a situation similar to the American one. First because the system established by the directive is different from the American law: e.g. a 10 year limitation period is established in Europe; the directive does not cover business or professional damages; a financial ceiling to liability may be imposed. Secondly, the American legal system in general differs from the European systems: e.g. contingency fee for lawyers, possibility for exemplary damages, for class actions, decisions by juries, high specialization within the American bar, etc..⁸

LEGAL BASIS AND OBJECTIVES OF THE DIRECTIVE

Before going into a more detailed analysis of the questions which may be raised when examining whether the EEC Directive of 25th July 1985 concerning liability for defective products does apply to computer programs, it may be useful first to describe the directive.

An analysis of the legal basis and of the objectives of the directive is not purely academic, because from the objectives pursued by the EEC legislation, it may be interesting to try to deduce certain rules of interpretation; those rules will in turn be useful when dealing with matters or situations on the outside borders of the scope of application of the directive. According to the preamble of the directive, recourse to article 100 of the EEC Treaty (on approximation of laws) was justified because divergences in the laws of the Member States

regarding product liability "directly affect the establishment or functioning of the Common Market" in three different ways.

1. The legal divergences in the laws of the Member States are said to lead to a **distortion of competition** by imposing unequal burdens on industry and trade of certain Member States; stricter rules of liability for the producer mean higher production costs (insurance premiums, reserves of cash to face possible lost trials).⁹
2. Those legal divergences are also said to affect the **free movement of goods**: the producer's decision to export to another State might be influenced by the law on product liability of that country¹⁰; for the same reason, it is thought that the consumer is thereby forced to make a choice between products for the eventual damages of which it will be easy to obtain compensation¹¹ and products which might be cheaper but for which the same compensation is more likely¹². Both producer's decisions and consumers' choices would thus be influenced by legal considerations instead of economic ones (which should exclusively be determinant in the idea of a single market)¹³.
3. The differences in the Member States' legislations entail a different degree of **protection of the consumer**, and that is deemed "not compatible with a common market for all consumers"¹⁴. Therefore, harmonization had to be achieved.

However, this objective of harmonization itself has not been fully achieved by the adoption of the directive, and has been altered by mechanisms used by the Commission and which were more in favour of consumer protection:

First, some options had to be left to national legislators on three issues, as part of the compromise reached in the course of the negotiations; as a result, the national laws implementing the directive may vary on those three points.

Secondly, as we shall also see, the directive does not replace the existing national laws but it only adds a new legal instrument in the hands of the victims¹⁵. As the preamble states, "in so far as these provisions also serve to attain the objective of effective protection of consumers, they should remain unaffected by this directive". This is a clear indication that **the main objective of the directive is the protection of consumers**, and that harmonization only comes second.¹⁶

To sum up what has been said about the legal basis of the directive and about its objectives, we can say that if references to effects on competition and on the free movement of goods were deemed necessary to justify the initiative of harmonization by the Commission, the real purpose of the adoption of the directive is to achieve a better protection of consumers throughout the Community.

Examining whether the objective of improving consumer protection has been achieved, is outside the scope of this article¹⁷; however, it would be interesting to analyse the objectives of the directive because of a possible interpretation of its provisions, both by legislators and by courts: as we said earlier, guidelines for interpretation will be useful for matters which were not explicitly included in the scope of the directive.

In such cases, could one sustain that **since the real**

objective of the directive is the protection of consumers, a sort of teleological interpretation of its provisions permits its application to subjects not envisaged by EEC officials, so long as such interpretation serves the interests of consumers?

Or, on the contrary, **should the proclaimed objectives of harmonization play an equally important role**, and forbid that interpretations by courts or legislators lead to diverging results?

After all, the directive also tries to achieve "a fair apportionment of the risks inherent in modern technological production"¹⁸ between the injured person and the producer. Therefore, interpretation of the text in one particular direction rather than in another might amount, so it could be argued, to giving to the directive a unilateral character that it does not want nor pretend to have. It may also be noted that other drafts were making clear that Member States were free to enact stricter rules for the protection of consumers; the draft finally adopted does not contain a similar provision, thereby leaving the door open for discussions¹⁹.

PRINCIPLES AND DEFINITIONS CONTAINED IN THE DIRECTIVE

1. **Principle of liability regardless of fault:** The producer shall be liable for damages caused by a defect in his product (article 1 of the directive); the victim will have to bring evidence of the damage suffered, of the defect in the product and of the causal link between defect and damage (article 4). The directive thus established a system of liability of the producer even in the absence of any fault or negligence on his behalf, and there lies the principal innovation brought about by the directive.
2. **Scope of application as regards products:** Covered by the directive are all movables, with the exception of primary agricultural products and game, even when incorporated into another movable (e.g. tyres of a car) or into an immovable (e.g. bricks of a wall). It is not necessary that the product be for sale (e.g. a bottle of soda); it is sufficient that it is at the disposition of the public at large for "consumption" (e.g. a ferry-boat, or a plane, if it can be considered in national law to be a movable good). The definition includes "all movables which can be the subject of economic activity"²⁰. From that definition, one can deduct that inter alia immovables are excluded, as well as services for which the EC Commission has now proposed a new liability directive²¹ concerning immaterial goods.
3. **Persons who may be held liable:** The directive gives the victim a legal remedy against (article 3):
 - the real producer (of a finished product, a defective raw material or of a defective component part);
 - "any person who, by putting his name, trademark or other distinguishing feature on the product presents himself as its producer"
 - "any person who imports into the Community a product for sale, hire, leasing or any form of distribution in the

course of his business"²²

- the supplier of anonymous products, unless he informs the injured person, within a reasonable time, of the identity of the producer or of the importer in the EEC.

When several persons may be held liable for the same damage, they will be held jointly and severally liable (article 5).

4. **Persons who may rely on the directive:** The directive does not give any definition of the injured person, so that any person who can fulfil the requirements concerning evidence (i.e. proof of damage, of defect and of causal link between the two) may start an action. The existence of a contract between the person held liable and the injured consumer is irrelevant.
5. **Definition of defect:** A product is considered to be defective "when it does not provide the safety which a person is entitled to expect" (article 6); this notion should not be confused with the fitness for use (involving contractual liability and settled according to contractual terms — we have said earlier that the existence of a contract was irrelevant). The words "a person" are to be understood as meaning "the public at large" (preamble, par. 6).

Producers should pay much attention to the quality of their products, for judges are expressly invited to take all circumstances into account, including the presentation of the product (symbols warning against dangers, user's manual accompanying the product), the use to which it could reasonably be expected that the product would be put (e.g. children put toys in their mouth) and also the time when the product was put into circulation (the buyer of a second-hand product cannot expect the same degree of safety as the purchaser of a brand new one).

Finally, a product will not be considered defective for the sole reason that a better product is subsequently put into circulation (article 6).

6. **Damages covered by the directive:** While the definition of product was rather large and the list of actionable persons rather long, the definition of the damages covered limits to an important extent the possibilities for applications of the directive (article 9). It covers only:
 - the damages caused by death or by personal injuries;
 - the damages to items of property other than the defective product itself²³. For the compensation of those damages, the directive provides for two cumulative conditions and for one reduction of the amount: first, the damaged item must be of a type ordinarily intended for private use (objective condition) and must have been used by the victim mainly for his own private use (subjective condition) secondly, a lower threshold has been set up, so that compensation will in every case be reduced by an amount of 500 ECUs.
7. **Existence of a causal link between defect and damage:** After having established a defect in a product and a damage (of a type covered by the directive), the plaintiff has to bring evidence of a causal relationship between defect and damage.

The directive does not give any explanation about the causal relationship. Questions may arise for indirect damages; in 1976, it was thought to be an important issue: "This question of remoteness of damages is a matter for the courts in each

Member State to decide. Research into the comparative law on the subject has shown that in practice, however, the amount of damages awarded in individual cases will not differ substantially"²⁴; this point of view has been criticized, as leaving out of harmonization a crucial point of many product liability cases²⁵.

Different theories of causality are used in the Member States: "adequate causality" (France, among others), "aquilian relativity" (Germany and the UK), "causa proxima" (Italy), equivalence of conditions (Portugal and Belgium)²⁶.

8. **Exclusions from liability:** The directive provides for a restrictive list of grounds of exclusion from liability (article 7). All of those possibilities of exemption but one are in fact logical deductions from the basic principles of the system, which requires that a product that is defective at the time when it is put into circulation entails liability of its producer for damages caused by the defect, regardless of any fault on his behalf. For example, the producer will not be held liable if he can prove that he did not put the product into circulation, or that the defect came into being after the putting into circulation of the product.

The only real exception to the principle set out above is what is usually called the 'development risks defence': the producer will not be held liable if he can prove that "the state of scientific and technical knowledge at the time when he put the product into circulation was not such as to enable the existence of the product deficit to be discovered" (article 7.4). In this respect, the impossibility to find the defect must have been absolute in order for that defence to be accepted by the judges²⁷; arguments relating to costs necessary to find the defect are in no way decisive. This ground of defence is one of the options left to national legislators; they remain free to exclude it, if they so wish.

9. **Interdiction of exemption clauses:** One of the improvement provisions of the directive is the article which forbids contractual variations to the principle of liability which the directive establishes (article 12).

One may however see two limits to the provision of this article. First it only concerns "the liability of the producer arising from this directive"; we have seen that the other systems and rules of the law of liability remained unaffected by the directive (article 13); for those grounds of liability, contractual clauses remain licit (if they can still be of any use at all). Secondly, those clauses are only forbidden "in relation to the injured person"; so contractual exemptions are licit between the different links of the production and distribution chain, but they cannot be used against the final consumer.

10. **Limits to the bringing of an action:** Actions must be brought within two different limits that are both to be respected at the same time:
 - a three year limitation period, starting the day on which the plaintiff became aware or should reasonably have become aware of three things: the damage, the defect and the identity of the producer (article 10);
 - a ten year extinction period, starting the day on which the producer put into circulation the product which caused the damage (article 11).
11. **Limits to the amount of compensation:** We have seen earlier that a lower threshold diminishes the

compensation by 500 ECUs. Another limit may be set up to the liability of the producer; if the national legislator wants it²⁸, a financial ceiling may be imposed, but of no less than 70 million ECUs, for damages resulting from death or personal injuries and caused by identical items with the same defect. Such a high minimum renders the many discussions about it rather theoretical, since it has been said that even in case of mass damages, it is not likely to apply²⁹.

SOME GENERAL REMARKS ON THE DIRECTIVE

The introduction of the principles of the directive in the laws of the Member States brings about changes of varying importance: in some countries, the evolution will be very important (Greece, Spain, Portugal); in others, it will amount to a codification of the existing and recent case-law, and in some others (France, Belgium), the answer as to whether it will prolong the trends favoured by the judges (and thereby entail a step forward for consumer protection) will largely depend upon the options taken by the national legislators. But as such, the acceptance in all the Member States of the principle itself of liability regardless of fault is a very important achievement. Total harmonization could not be achieved at this stage, but a review procedure has been set up, in order to re-examine the need to keep the options open³⁰.

PART 2: THE APPLICABILITY OF THE DIRECTIVE TO SOFTWARE

Examples of damages of a type covered by the directive (i.e. damage to health or to private items of property) and caused by defective software can be given: software is more and more often used in medical devices³¹, in air-traffic control³², in manufacturing processes (Computer Aided Design, or Computer Aided Manufacturing)³³, in nuclear power reactors, etc.... In all those cases, defective software can cause damages of a type mentioned above.³⁴

Those examples indicate that discussions on the issue of applicability of the directive to the software environment are not purely academic. However, as we said earlier, the directive only covers damage to items of property intended and used for private purposes; it means that business and financial damages (e.g. arising from defective software used for accountancy purposes) are excluded from its scope of application.

I) THE ISSUE OF APPLICABILITY OF THE DIRECTIVE TO SOFTWARE

IS SOFTWARE A PRODUCT OR A SERVICE?

THESIS

It is sometimes sustained that software is a service. As it is clear that the directive does not apply to services³⁵, it is then deduced that software is out of the scope of application of the directive.

REFUTATION OF THAT THESIS

Several reasons may be given to show that such a thesis is not valid:

1. A clear objection to it is that making software available for a customer may be a service, but that software itself is a product; in the same way, restaurants do provide services, but the food they serve remains a product, and does not become a service for that sole reason.³⁶
 2. The whole existence of a service lies in the act of its providing, whereas software remains available once it has been provided, and does not disappear after its use.
 3. Should one make a difference between the sales of a standardized software package and the delivering of a custom-fitted software? A first objection can be that the service element is more important in the latter case (and totally absent in the first case), but in our opinion, it does not change the fact that at the end of the process of "tailoring" the programs, software is delivered (which can have the same material characteristics as the standard package, but which was precisely the original subject matter of the agreement between the software house and the customer). I do not think that by applying the 'essential nature' test (i.e. by examining what the essence of the contract is: the providing of a service, or the delivering of a product?), as is sometimes suggested³⁷, it would change anything. In fact, one can sustain that the 'essence' of the agreement is precisely the tailored software which was delivered. The same reasoning could be applied to similar situations, where time and money may be spent in the making of the product according to the specifications of the purchaser, but where the final 'product' is the essential part of the agreement: the ordering of a painting from a portrait painter, the materials used, fancy gadgets, safety, etc...
 4. Arguments based on the idea that the directive is only meant to be applied to industrially produced goods (such as standard software) but not works of art, of craftsmanship and to situations where a strong person-to-person relation was established (such as tailored software) do not have much validity either³⁸. First, "producer" in the sense of the directive may be a multinational company or a craftsman³⁹. Secondly, the Parliament had suggested to leave artistic and craft products out of the directive⁴⁰, but that was refused, and article 2 of the directive does not impose such condition of industrial production⁴¹.
- This reasoning has been recently confirmed by the Commission's answer to a Member of Parliament⁴²: to the question whether the Directive was applicable to computer programs, the answer was that the directive did apply to them, as well as to products of crafts and art. The condition of industrial production (contained in the preamble) can thus be definitely abandoned.
5. Finally, making a distinction between standard software and custom-fitted software brings with it another difficulty: what is today custom-fitted can tomorrow become standardized and sold in many exemplars, if it's deemed that such commercialization would be beneficial to the software company. Also, some programs may be standardized for their major part and only adapted to the needs of the customer on some aspects.

CONCLUSION

To sum up, software may sometimes be the object of a service, but as such it is not a service; it cannot therefore be excluded from the directive on that particular ground⁴³. The mere fact that it may be provided within the context of a service situation does not put software out of the scope of the directive.

IS SOFTWARE TANGIBLE OR NOT?

This question is only important if the directive applies to tangibles but not to intangible goods; this preliminary question must therefore be raised.

1. DOES THE DIRECTIVE ONLY APPLY TO TANGIBLES?

The comparison of the words used in the different versions of the directive does not give a clear answer, neither will an interpretation of the common meaning of the words used. It was explicitly provided in article 2 of the directive that electricity was to be considered as a product; can any argument be deducted from that? It is sometimes sustained that if an express provision proved necessary for such a borderline case as electricity (which is, to a certain extent, tangible), it means that all the other 'intangibles' are not included. In fact, the reason for such express mention is that electricity in some countries is considered as energy but not as a good or as a product⁴⁴; therefore the argument 'a contrario' cannot necessarily be used.

Preparatory works are said by some commentators to clearly indicate that immaterial goods were excluded⁴⁵. We have not seen any express provision to that effect; however, nothing can give the impression that it was meant to include intangible goods either.

Should one then go back to the objectives of the directive, and then say that since its main objective is the protection of the consumer, the necessary answer would be to say that intangible goods are included in the scope of the directive? Again, would that not amount to giving a rather unilateral character to the text (i.e. mostly in favour of consumers) while it expressly mentions "a fair apportionment of the risks inherent in modern technological production" as one of its objectives? The answer is obviously more a matter of policy than a legal issue.

However, from the provisions of the directive, and from the text of its preamble, it is at least clear that the drafters did not have intangible goods in mind. If they were to be included, many provisions would become difficult to understand:

- What would be the meaning of raw materials used in their production process (article 3)?
- Who would be the producer of immaterial goods?
- Who could import them?
- How could one affix its trademark on it (article 3)?
- What would be a component part of an intangible good?
- What would be meant by the "presentation" of it?
- When is it put into circulation?
- Why would the text mention "manufactured products" (article 7.c)?
- What could be the design of such a good (article 7.f)?
- And what about the definition of damage to "any item of property other than the defective product itself" (article 9)?

All those questions indicate that intangible goods were not in the minds of the drafters. All the difficulties that their inclusion would entail (see list of questions above), in our opinion, are as many reasons to consider that intangible goods should be left aside, so long as there is no EEC initiative in this field; such a statement leaves aside the question of advisability of such an initiative; we are only saying that since such an application had not been envisaged, other rules may be applied to those goods, and the decision to apply strict liability in such a case should come from the EEC legislator, not from legal scholars⁴⁶. A more important argument is that if one considers that a directive applies to intangible goods, where do we stop? In that case, it covers, *inter alia* information (which is clearly immaterial); it is certain that such a consequence was not thought of, nor desired when the directive was adopted. One must now examine whether software is still included in the scope of application of a directive which only covers material goods.

2. IS SOFTWARE INTANGIBLE?

Computer software is usually defined as a set of instructions capable of causing a machine having information-processing capabilities to indicate, perform or achieve a particular function, task or result.⁴⁷ But those instructions are always materialized, in one way or another; they do not remain pure information once they have left the brain of the programmer.

To argue that software is intangible amounts to giving a wrong definition to the word: it may well be beyond reach for perception by human beings, but that does not mean that it has no material substance. And this material substance should be the dividing line between tangible (or rather material) goods (to which the directive is applicable) and intangible (or rather immaterial) goods (to which the directive does not apply).

In this manner, one may say that rights are immaterial, e.g. rights of ownership, intellectual property rights, and that information (and data) are immaterial: they have no substance, no possible impact in the material world (except with the help of a human intervention or decision). But that is not the case for software; once introduced in a computer, it does bring about changes that are material and 'tangible':

- in a personal computer, words will appear on the screen, and will eventually (upon instructions given by mean of the software) be printed on paper;
- and when introduced in a robot, the software will make it functioning and moving. To the extent that a program both contains information and can also give instructions to machines, it is just as tangible as a book and as a mechanical device.

Software presents the unique characteristic of being a list of instructions, a form of text (which at some stage is understandable by humans, i.e. in source code) and at the same time, a device which, once introduced into a machine, will bring it to work (in the same way as a mechanical device of complicated manufacture could do). To a certain extent, this dual character is also the origin of all the legal discussion on the means available for its legal protection (copyrightability for its literary character, patentability for its industrial character).

"Computer programs are hybrid functional works insofar as they employ words and symbols to implement and control a process (...) Programs possess both a symbolic and functional

nature (...) they are both **writings** in the traditional sense and **tools** for accomplishing particular results"⁴⁸ (emphasis added). Another indication of the material character of software is that in modern computer design, hardware and software functions are to a great extent interchangeable, and the symbols in any computer program are ultimately substitutes for hard wiring.⁴⁹

3. DISTINCTION BETWEEN THE SUPPORT AND THE CONTENT

Should one make a difference between the material support of the software (disk, tape, CD ROM) and the instructions contained in it? One could indeed argue that the support is material, but that the instructions are immaterial. Consequently, the directive would apply in cases where damage were caused by the support, but not cases where they arose from a defect in the list of instructions. A comparison with printed materials (such as books) may be useful:

a) **The material support**, quite clearly, is a 'product' in the sense of the directive, be it a book, a tape or a CD-ROM. However, damages caused by a support as such (and not by its content) are not very likely: a book may cause damages if, for instance, the type of ink used for its printing leaves poisonous sediments on the reader's fingers (cfr. the famous story of "the Name of the Rose"); a similar type of damage can in theory be caused by an electronic support (due to its physical characteristics, such as cutting edges)⁵⁰.

b) **The content (the software itself)**: in this respect, the comparison with a book is not valid. It is true that in the same way as a book contains letters, a disk may contain the list of instructions of the computer program. However, whereas the text of the book is meant only to be read by a person and can have no material impact of its own, the instructions of the software will activate a computer or a robot: those instructions may by themselves have an impact in the material world.

We see that the comparison with the book is not very relevant: in a book, the text can only be **passively** read; in a computer program, the instructions have an active role. In fact, in the case of software, what will induce a material effect is not the support itself but rather the instructions: depending on what the instructions 'say', the computer or the robot will do one thing or another. Supplementary evidence of the role of the instructions is the fact that software can be transmitted independently from any support, by means of cable or wires and also by radio. But is such a fact not an indication that software is immaterial?

a) **Transfer by cable**: in such case, one can sustain that since electric impulses are sent to the user, a tangible good is transferred (the directive itself considers electricity as a product).

b) **Transfer by radio**: in that case, the reasoning held above is not so easily applicable. Should we conclude that software is intangible since it can even be transmitted by radio? We do not think so: one can say that a computer program, at the origin, is always integrated on a support: copies of it may be sent to users by means of telecommunications, but at the source there is always a software which is incorporated on a material support, and this support will be located on the premises of the software house or of the software producer: in the case of telesoftware, no material good is transferred but a material

good (the software "located" on the premises of the producer) is made available to users. The directive does not require that the product be physically transferred: indeed, any form of distribution for economic purpose is sufficient (article 7. c of the directive); in the case of telesoftware, the program is not transferred, but it is made available to consumers (and "put into circulation" in the sense of the directive through the use of telecommunications, which is just one form of distribution of a tangible product among many others).

We do not think that it would be wise to make a distinction between the case where software is incorporated into a support and the case where it is transferred independently, and then to say that the directive only applies in the first case; indeed, if one sustains that software is intangible and that only its support (disk, tape) brings it back into the field of the directive, one would come to strange consequences⁵¹: damages caused by a defect in the first type of software (with a support) could be compensated on the basis of the legislation introducing the directive in the national law, whereas victims of damages caused by the effects in the second type of software (without material support) could not benefit from the adoption of the directive. Such differences in treatment could not easily be justified from the point of view of the victim, and as it has been rightly said: "If the presence or lack of a tangible medium would turn out to be of crucial importance for the liability of the producers, creative minds will most likely confront the market with a number of revolutionary forms of distribution".⁵²

Further, the application of the directive in a particular situation where software is involved should not depend upon technical features of the software, for several reasons: technology always brings about new changes; the judges will not be able to cope with those problems; it makes no difference for the victim, and producers would easily come up with new products to escape liability.

CONFIRMATION OF THE APPLICABILITY OF THE DIRECTIVE TO SOFTWARE

The reasonings made hereabove to sustain that the directive applies to computer programs only constitute a commentator's personal opinions.

However, one can find at least two confirmations of this thesis from more official sources⁵³: one from the EC Commission itself, and one from the Belgian government.

a) The commission's answer to an M.P.'s question

To a question from a Dutch M.P., as to whether the directive applied to software, the Commission confirmed that it did, as (the Commission added) it also applies to products of crafts and art.⁵⁴ The reasoning behind the Commission's conclusion was not given, and it is impossible to say if the justification is either that 'software is intangible but the directive applies also to intangible goods', or that 'the directive only applies to tangible goods but software is a tangible item'.

A Commission's answer to a question raised in the European Parliament does not constitute a binding interpretation for a directive, which could only be given by the EC Court of Justice, but it certainly offers a high degree of authority.

b) The opinion of a Member State's government

The text of the Belgian Act introducing the directive into national law was adopted in 1991.⁵⁵ It provides that it applies to tangible goods ("*tout bien meuble corporel*"), and thus excludes intangible goods.

We have tried to demonstrate that this is indeed what the directive was meant for, but the question remains controversial as we have seen it. It will to a certain extent be possible in the future to draw some conclusions from the Commission's reaction to this text: if it considered the Belgian law to be incompatible with the directive (and too restrictive in its scope of application), it should then launch infringement proceedings against Belgium; if it does not, it would mean that the Commission sees no objection to having the directive only applying to tangible items (which would not preclude, in our opinion, its application to software). To our knowledge, the matter has not been decided yet by the Commission, so that it may at this stage be premature to draw any conclusions.

The question was raised, during the discussions in the Commission of Justice of the Belgian Chamber of Representatives, as to whether the Belgian draft (and the directive) would apply to software. The Minister of Justice confirmed that the new law would indeed apply to computer programs, even if it only applied to tangible items, because computer programs could be considered as being tangible. In his answer, the Minister refers to a study that the author of this article happens to have done, and he endorses our conclusions⁵⁶ (which were similar in 1989 to those presented here).

CONCLUSION

To sum up what has been said above, we have tried to show that software was tangible and therefore that the directive (which only applies to tangible goods) does apply to computer programs. One should then examine the requirements for its application in a particular situation⁵⁷.

II) THE CONDITIONS FOR THE APPLICATION OF THE DIRECTIVE

As we said earlier, in order to obtain compensation, the customer will still have to prove:

- first, that the product is defective;
- secondly, that the damages suffered are of a type covered by the directive;
- and finally, that there is a causal link between the defect of the product and the damage.

We have up to now only established that software was a product. The other conditions should now be examined.

THE NOTION OF 'DEFECT' AS APPLIED TO SOFTWARE

According to article 6 of the directive, "a product is defective when it does not provide the safety which a person is entitled to expect, taking all circumstances into account, including:

- the presentation of the product;
- the use to which it could reasonably be expected that the product would be put;
- the time when the product was put into circulation".

It may be useful to recall that the notion of defectiveness here

under examination is not to be confused with the fitness for use (which is a matter for contractual liability). The problem with software is that, as it is unanimously recognized, 100% bug-free software, if it exists at all, is definitely the exception to the general rule. What degree of safety should one then expect? And what safety is one entitled to expect? Clearly, the answer is more a matter of policy than of legal reasoning. When taking his decision, the judge should consider different factors (article 6):

- **the presentation of the product:** it concerns both the user's manual and also the screen display output (with clear warnings where necessary);
- **the use of which could be reasonably expected:** some programs may be adapted for new uses which may not have been foreseen by the producer. It seems logical to apply stricter criteria to software used in circumstances where human lives may be endangered (such as software used in piloting systems of airplanes or in medical apparatus) than to computer programs used e.g. to investigate databases;
- **the time of putting into circulation** on the one hand, software products become rapidly obsolete, and the degree of safety to be expected may rapidly evolve, so that the judge should pay special attention to that, and should bear in mind the provision of article 6.2: "A product shall not be considered defective for the sole reason that a better product is subsequently put into circulation"; on the other hand, certain licensing contracts provide that updated programs will regularly be delivered; in that case, the time factor will play a similar role and can only to a lesser extent intervene in diminishing the producer's liability in the course of time.

What the public at large does expect from software products (and computer-driven machines) is hard to say: a survey would probably indicate a large scale of reactions, from a general mistrust towards anything having to do with computers to an exaggerated trust in them. And what the public at large is entitled to expect is even more difficult to determine, as it is more a matter of policy.

In practice, there will probably be disclaimers of liability to the advantage of the software-producer in the contracts between himself and the airplane company or the hospital: those disclaimers can play their role as between the parties to the contract, but they cannot prevent the injured persons (or the persons subrogated in their rights) to bring an action against the software producer by using the remedies made available on the basis of the directive (no-fault liability system).

The opinion of the UK Department of Trade and Industry⁵⁸ (on the applicability of the directive software) cannot be followed, in our view. Starting from the opinion that the directive does not apply to information⁵⁹, and considering that software is information and is not a product in the sense of the Directive, the Department concludes that in cases of damages caused by a robot, due to a defect in the software used to make it function, the victim only has a case against the producer of the robot, but not against the producer of the software. This solution, in our view, does not comply with the directive, which provides that the victim can

sue "all producers involved in the production process"⁶⁰ and that the word "producer" means a.o. "the manufacturer of a component part"⁶¹. Software as such is a product; it can thus also be a component part, and its producer may be sued by the victim, along with the producer of the finished product (e.g. a robot or a plane). This might be important for the victim, in cases where the producer of the robot is in bankruptcy or is not very solvent. The Commission's Answer to Parliament⁶², by stating that the directive applies to software, proves that the approach taken by the Department of Trade and Industry is wrong.

The consequences of the applicability of the directive could sometimes be rather harsh: in cases where it is foreseeable that property or human life could be put at risk, any bug in the program likely to cause damages would render the software defective (and its producer liable)⁶³. But is it not true indeed that it is for the victim totally irrelevant to know that he was injured by a computer-run machine or by a mechanically-driven machine? What would justify special treatment to the advantage of the producers and to the disadvantage of the victims? Would such discrimination be a sound manner to encourage computerization of industry? It would certainly expose users to always greater risks if software producers were granted more lenient criteria of liability than producers of mechanical devices. So the question of when software is defective will definitely always be a difficult question for the judges to resolve. There may be one way by which the producer can escape liability, i.e. by using the so-called development risks defence.

THE DEFENCE OF DEVELOPMENT RISKS

Article 7.e. provides that the producer will not be held liable if he can prove "that the state of scientific and technical knowledge at the time when he put the product into circulation was not such as to enable the existence of the defect to be discovered". The starting point is that the producer took all possible care and made every possible checks according to the state of technical knowledge at that time. As it proved impossible to arrive at unanimity on that issue among the Member States, this defence is optional: it is open to the producer, unless the national legislator has decided otherwise when introducing the directive into his national law.

We said that a 100% bug-free software would be the exception to the rule; computer scientists also say that it is absolutely impossible to guarantee in advance that a program does not contain any defect; if that is the case, one can here talk about development risks in that situation. The impossibility of discovering the defect must be absolute. The fact that practical difficulties were complicating research or safety checks, or that it would have been very costly to make sure that the product was safe, is irrelevant in this respect and will not be considered by the judges as a sufficient defence.

Of course, it will be difficult, in countries where this defence is accepted, for the producer to bring evidence of such impossibility; it is feared that the judge will then accept to shift the burden of proof upon the victim⁶⁴, and that it will in any case encourage litigation in courts, prolong judicial proceedings and weaken the victim's bargaining power in out-of-court settlements. For the judge also, the issue of

development risks raises difficult questions: what was the "state of scientific and technical knowledge" when the software was put into circulation? Is for instance, an article published in a specialized Japanese review sufficient to establish the possibility to discover the defect?⁶⁵ For the rest, it seems that the issue offers more opportunities for discussion among lawyers than for actual remedies in court, as it will practically prove very difficult for the defendant to establish such absolute impossibility (unless the judge satisfies himself with certain probabilities and then asks the plaintiff to bring counter-evidence, which would not be in conformity with the directive).

It has been sustained that even if a producer could successfully invoke the development risks defence, he could still be held liable on the basis of negligence⁶⁶: if the state of scientific knowledge at the time when the product was put into circulation "was not such as to enable the existence of the defect to be discovered"⁶⁷ it has been suggested that it may then have been reckless to put such product into circulation and to have chosen the software solution rather than a safer mechanical device. It does not seem that this reasoning should be followed: in a negligence-based system of liability, the mere putting into circulation of a defective product, as a matter of principle is not sufficient to constitute negligence if it is not accompanied by certain circumstances; and where would there be any negligence in those situations where every possible check has been done in order to avoid the occurrence of a defect? This defence of development risks therefore is not automatically suppressed by an action based on negligence: this escape remains open, provided that sufficient evidence is brought by the defendant.

IMPACT OF STANDARDIZATION AND CERTIFICATION

We do not envisage a discussion here of all the implications of standardization and certification on the liability of software producers (which could constitute in itself a topic of study); only a few remarks will be made⁶⁸.

If a standard has been made mandatory, it is clear that compliance with its term would exclude the producer's liability in cases where the defect of the product originated in the standard itself (see article 7.d. of the directive); an action against the standardization body could then be envisaged.

If a producer has voluntarily decided to follow existing standards, it may be expected that these existing standards would represent the state of technical art prevailing at that time, and the level of safety which the user is "entitled to expect" (article 6.1. of the directive), so that the product at stake would **probably** not be considered defective⁶⁹. As such however, such compliance would not necessarily exclude any liability, nor constitute a development risk defence.

If the producer had its product (or software) certified by a certification body, the "certificate" would be taken into consideration as part of the "presentation of the product" (article 6.1.a of the directive), so that if the particular product at stake does not comply with the requirements of the certificate it will be considered defective since people are entitled to rely on such a certificate. Another situation would be if the product, even though complying with the certification requirements, causes damages; in that case, certification of the

product would not *ipso facto* exclude all risks of liability for the producer; he would definitely have a good argument against liability for negligence, but it could still happen that the judge would find the product defective in the sense of the directive. In that case, the producer could try to rely on the development risks defence ("everything has been done, and yet nothing could be detected..") if that defence had been adopted by the national legislator and could start an action against the certification agency.

THE NOTION OF DAMAGES

As we said earlier, the definition of damages covered by the directive does limit to a great extent the possibilities for its application. For instance, financial damages caused to an enterprise by e.g. a defective accountancy software are not covered; similarly, damages to items manufactured by the enterprise caused by a defect in the software used in the manufacturing process are not covered: in such case, only personal injuries to workers would be covered. Examples of possible damages caused by defective software to health or property have been given. In fact, all those examples are cases where a computer program is used to run a machine or a manufacturing process. In all those cases, software is clearly used as a tool rather than as a source of information for the user.

But not all computer programs are used to run machines; some programs are only meant to be used on an office computer or on a home computer, to provide the user with all sorts of information; the only material output of such programs will be the printing of that information or results. In those cases, direct damages to health or property are much more difficult to envisage⁷⁰; those damages would only occur as a result of an action of the user following a decision taken on the basis of the information received from the computer. This is where, in our opinion, the question of the causal link should be raised.

THE ISSUE OF CAUSALITY IN CASES INVOLVING DEFECTIVE SOFTWARE

The causal relationship between defect and damage is the third evidentiary requirement imposed upon the injured person by the directive. When discussing the tangible or intangible character of the software, we said that it is a text written by a programmer, and at the same time, it implements a material process (in a robot or in a computer). Here we shall see that software does not only have a hybrid nature, but that **it also brings about two different types of effects or 'outputs'**.

a) Distinction according to outputs

It seems possible to draw the following distinction:

1. **A 'material output'** on the one hand, some programs are incorporated in 'machines' (in the broad sense), and the running of the program in those cases brings the machine or the robot to move and work. The human intervention is normally limited to starting the program; once that is done, the software directs the robot in performing certain tasks involving physical and material changes in the environment: the plane can take off, the robot can lift objects, etc... If some damage arises, it will be due (as the case may be) to a defect in the product and will have been directly caused by the product itself (the machine being the product, the software being one of its

component parts).

2. **An 'intellectual output'**: On the other hand, some computer programs are only used to provide users with useful information or to perform tasks that are specific to the office environment. The running of the program only brings the computer and the printer to work. Human intervention in those cases is more important and takes place in a sort of dialogue with the machine: the only output is the result (data) appearing on the screen.

b) Distinction according to function

In both cases, the instructions contained in the program have the same material characteristics (electric impulses), but their function is different:

1. **giving instructions to a robot**: in the case of the program used in a robot, **the software plays the same role as any other mechanical device**: the instructions it contains are written for the machine and, as such, do not have any value as information for a human user. The instructions contained on the support could be compared to the material characteristics of a mechanical device (its shape, its size, its solidity); therefore, they may have a direct impact on the material environment: a direct causal link will clearly be established between the defect in the software and a possible damage;

2. **giving information to a human user**: in the other case, **the software plays the role of a source of information for the user**; the instructions it contains may have to be first used by the computer (which will display them on the screen), but the ultimate user for which they have been written is a human being (and not a machine). Therefore, there is a new and crucial element intervening in the chain of causality between the defect of the software and a possible damage, i.e. a human decision, followed by an action.

In some cases, this intervention of the user will be non-existent; in other cases it will be minimal (e.g. limited to collecting some information given by a computer and introducing them in another machine, or actioning this machine in a manner directly dictated from the information received and without taking any independent decision⁷¹); in some other cases, it will on the contrary be very important. The judge, in each case, will have to establish whether a causal link still exists and whether it is appropriate therefore to apply a strict liability scheme to the case pending at law.

To illustrate the distinction: a computer program can either tell a user how to prepare an apple pie (**intellectual output**); and when introduced in a robot, a computer program could also cause the robot to make the pie (**material output**).⁷²

c) Consequences of the distinction

In one case (instructions to a robot), the software may directly cause physical damage. In the other case (information for a human user), physical damage could only result from a decision based on the information gathered by using the software. In our opinion, the directive only applies in the first case: both programs are tangible, both results are tangible (movements of a robot, data on a screen), but only the first type of damage is covered by the directive. **Product liability (and liability regardless of fault) is only meant to apply to the first type of situation:**

1. Product liability does not apply to 'intellectual outputs':

Indeed, if we applied it to the second situation, we should also apply it to all other cases where information is given to a user, in the form of an expert-system, of a book, of broadcasted information, etc... And such consequence cannot derive from the directive⁷³:

- first, it is clear that the directive was never meant to apply to information and that its drafters never had it in mind (the same solution applies to all immaterial goods);
- secondly, such issue (liability in the information field) implies important policy decisions, the question should therefore be discussed by all parties concerned and the decision should come from the legislator, but not from legal scholars or judges who would thereby interpret a text in a too far reaching direction.

Consequently, for the damages arising indirectly (through the intermediary of a user's decision), disclaimers are still valid; other schemes of liability remain applicable (e.g. liability based on tort, professional liability).

2. Product liability does apply to 'material outputs':

In those cases, disclaimers of liability will be held null and void, and the software producer is liable for damages regardless of any fault. We said that in those cases, the software played the same role as any other piece of machinery. There is thus no reason to treat it differently. A more favourable treatment for those producers would not only be detrimental to victims, it would discriminate against producers of more traditional products.⁷⁴

Policy reasons underlying strict liability have been said to generally apply to software:

"Like the products to which strict liability pertains, computers and their software benefit society. Software defects are difficult to predict and can be unreasonably dangerous. As with the doctrine of strict liability, the software manufacturer is better able to assess risks than the technically illiterate user and he can either prevent them from becoming realities, or warn customers of their existence. By putting their programs on the market, software manufacturers invite the public to use them, implying that the product is safe."⁷⁵

Also, risk-spreading, accident reduction and victim compensation are all policy reasons underlying product liability; they are said to also apply to computer programs.⁷⁶

SUMMARY

To sum up, for software programs incorporated into 'machines', the product itself (the machine) can cause damages due to a defect of a component part (the software)⁷⁷; for the other types of software, damages (as covered by the directive) can only arise if a decision is taken by a person on the basis of information given by the computer. In such a case, the personal liability of that person may be at stake, more than the liability of the producer of the software, and such agitation against this person would then be a traditional liability action based on proof of negligence (without using the remedies offered by the directive).

In fact, the directive itself, in its article 8, provides that "the liability of the producer may be reduced or

disallowed when, having regard to all the circumstances, the damage is caused both by a defect in the product and by the fault of the injured person or any person for whom the injured person is responsible". This article does allow the judge to take into account the human factor mentioned above; in fact, this provision is only one application of the requirement of causality, of which in our opinion the importance in the context of liability for software is often underestimated in the doctrine.

SOME CONCLUSIONS

We have seen that even if it has been controversial at one time, it has now become clearly established that the EEC directive on product liability did apply to computer programs and the Commission itself has confirmed those views.

However, because of the conditions imposed by the provisions of the directive in order to eventually obtain compensation, a software producer will only rarely be held liable on the basis of a strict liability scheme: the **definition of defect**, as we have seen, raises many questions and may result in diverging court decisions (on issues like the legitimate expectations of the public, and on the state of scientific knowledge); the **scope of damages**, covered is rather limited and leaves out all business and professional damages; the **requirement of causality** will also limit the possibilities for compensation (even if it is typically an issue where judges enjoy much discretion).

There are certain products for which the introduction of the principles of the directive will entail important changes, like household appliances. Those are the type of traditional products for which the directive was primarily adopted. In the case of computer programs, the changes will not be as important, mostly because of the definition of the damages and because of the requirements of causality.

The importance of the directive for the victim comes principally from two aspects: a no-fault liability system, and the interdiction of exemption clauses. In certain countries, the case-law, starting from a negligence scheme, has arrived to a stage coming very close in practice, to strict liability; also, exemption clauses are sometimes declared void (on various grounds). As a consequence, even when the conditions for the application of the directive are not met (e.g. relating to damages), the judge might in certain cases still take a decision which comes close to applying liability regardless of fault. This may be all the more true now that some express legislation has confirmed the principles developed by case-law, and has applied them to specific field (products): in cases where the directive is not legally applicable (i.e. when conditions are not fulfilled), its principles might however more and more often serve as guidelines.

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¹The present article was originally written in December 1989. The author has updated it for this publication. At that time however, very few articles had dealt with this issue. In the meantime, it seems that the idea of applying the directive to computer programs has become more widely accepted than when his text was first written and when the author presented this views in various circles.

Besides the various articles mentioned in footnotes to the present text, other articles have been published: D. Delaval, "La responsabilité du Créateur de logiciel et ses limites", *Gazette du Palais*, 15-16 avril 1992; R. Westerdijk, "Software als produkt", *Computerrecht*, 1992, G. Kirk, "Software and the Consumer Protection Act of 1987", *Computer Law and Practice*, 1989, vol. 6, p.2 et s.; S. p.2 et s.; S. Whittaker, "European Product Liability and Intellectual Products". *The Law Quarterly Review*, 1989, p.125 et s.; C. Bown, "Liability for Supply of Defective Software", *Computer Law and Practice*, Sept. 1986, p.2 et s.; C. Reed, "Product Liability for Software", *C.L.&P.*, May 1988, p.149 et s.; see also D. Good and C. Easter, "Product Safety and Product Liability: the Implications for Licensing", *E.I.P.R.*, 1993, p.10 to 15.

The author does not have the impression that the ideas he had expressed in 1989 would now have to be held unacceptable due to new arguments or objections.

A shorter version of this article in French was published in *D.I.T., Droit de l'informatique et des Télécoms*: J.P. Triaille, "Responsabilité du fait des produits: logiciels, banques de données et information", 1990/4, p.37 et s. and 1991/1, p.31 et s.

Recently, a study was commissioned by the EC Commission on the legal aspects of software certification (hereafter "SCOPE study"; ref. P 2151); it also dealt with product liability for software (with national reports on this question from 7 Member States); the prevailing view has been to consider that software should be regarded as a product (see Fifth Report on the Legal Aspects of SCOPE, Aug. 1992).

²Council Directive of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products, O.J., no. L210 p.29

³See J.P. Triaille, "The EEC Directive (25 July 1985) on product liability and its application to databases and information", *C.L. & P.*, May/June 1991, p.217 et s.

⁴A 'directive' is an original legal instrument of EEC Law: it imposes upon the Member States a goal that has to be achieved, but leaves it up to the States to decide the legal form and the means appropriate to reach the said objective.

⁵Jh. Bourgoignie, "Responsabilité des produits, arguments connus pour un nouveau débat", *Revue Européenne de Droit de la Consommation*, 1987, p.7.

⁶See E. Montero and J.P. Triaille, "La responsabilité due fait des produits en Belgique après l'adoption de la loi due 25 février 1991", *Revue de Droit de al consommation*, 1991, 12, p.679 to 715, and M. Fallon, "La loi du 25 février 1991 relative à la responsabilité du fait des produits défectueux", *Journal des Tribunaux*, 1991, p. 465 à 473.

⁷**Francovich v Italian Republic**, C 6-90 and 9-90, not yet reported.

⁸F. Orban, "Product liability: a comparative legal restatement — Foreign national law and the EEC Directive", *Georgia Journal of International and Comparative Law*, 1978, p. 393.

⁹Memorandum on the approximation of the laws of Members States relating to product liability, Bulletin of the EC, supplement 11/76. I think that one can find a contradiction in the reasoning of the Commission: on one side it is said that divergences in strictness of liability rules entail differences in the costs of production; but at the same time, in order to reassure industrial circles the Commission stresses the fact that the introduction of a system of liability regardless of fault (as is set up by the directive) should not have any significant consequence on the price of insurance

premiums.

¹⁰Memorandum, op. cit. p. 4

¹¹i.e. if the law of the country of origin of the product provides injured consumers with easy remedies.

¹²i.e. if the law of the country provides for stricter rules for the consumers.

¹³This supposed effect on the free movement of goods also brings with it some sceptical remarks for what concerns the choice of the consumer: first, because it may be a too optimistic view to think that the average consumer is aware of, and even interested in the legal issues mentioned above; secondly, because the usually accepted rules of private international law lead to an application of the law of the place of residence of the victim ("lex loci delicti"), which means that the consumer may disregard the foreign law when making his choice; it will be the law of his own country which will determine whether, and to what extent, the foreign product was defective and caused damages (unless a contractual relation exists between the producer and the consumer and a clause provides for a determination of the applicable law).

¹⁴Memorandum, op. cit., p.13

¹⁵article 13 of the directive

¹⁶The words "consumer protection" come up 11 times in the preamble of the directive, whereas "competition" and "free movement of goods" each appear only once.

¹⁷The answer will largely depend on the options taken by the national legislators on the three optional issues, but it is possible that in some countries, the directive entails a step backwards for consumer protection.

¹⁸Preamble, para. 2.

¹⁹Legal controversies on the 'minimal' or 'maximal' character of the directive may be found in J.G. Cowell, "The European Product Liability Directive, some first impressions", *Product Liability International*, Aug 1985, p.144; also in Th. Bourgoignie, op. cit., p. 19, and in H. Duintjer Tebbens, "De Europese Richtlijn Produktaansporelijkheid", *Nederlands Juristen Blad*, March 1986, p. 373

²⁰L. Kramer *EEC Consumer Law, Droit et consommation*, Ed. Story-Scientia, 1986, (chapter on the 1985 Directive), p. 249; article 3.2 mentions "for sale, hire, leading or any form of distribution".

²¹Draft directive on the liability of suppliers of services, COM(90) 482 final, O.J., C12/8, 18 January 1991; see D. Good and C. Easter, op. cit., p.13. The question may in that respect be raised whether this proposal could apply not so much to computer programs but to database and to information services; that issue will however not be dealt with in this article.

²²This enables the victim to find in every case a person to sue within the EEC.

²³Damage to the product itself is compensated on the basis of contractual terms.

²⁴Memorandum, op. cit., p.17

²⁵F.A. Orban, "Product liability: a comparative legal restatement — Foreign national law and the EEC Directive", *Georgia Journal of International and Comparative Law*, 1978, p. 378.

²⁶J.L. Fagnart, "La directive du 25 juillet 1985 sur la responsabilité du fait des produits défectueux dans la Communauté européenne", *Revue du Marché Commun*, May 1986, p.261.

²⁷H.C. Taschner, "La future responsabilité du fait des produits défectueux dans la Communauté européenne", *Revue du Marché Commun*, May 1986 p.261.

²⁸Article 16.1 of the directive; this is a second option left to the Member States. As we said, the first one concerned the development risks defence; for the sake of completeness, let us mention that the third one concerns the inclusion of agricultural products in the scope of the directive

²⁹H.C. Taschner, op. cit., p.259; *Consommateurs Actualités*, 31-5-1985, p.2

³⁰Report by the Commission to the Council every five years,

accompanied, as the case may be, by appropriate proposals for further harmonization (article 21); discussions about the developments risks defence and the financial ceiling in 1995 (article 15.3 & 16.2).

³¹Several fatal accidents took place in the US, involving a medical robot designed to treat cancer by sending X rays on the patient's body; excessive radiation resulted from a defect in the software actioning the medical device and led to the patient's death; see A. Laplante, "Liability in the information age", *Infoworld*, Aug. 18, 1986, p. 37. A similar accident took place in France, where a patient was crushed by a radiography medical robot; see *Expertises*, 1984, p. 175.

³²See examples given in D. Davies, "Computer losses in 1988 — A review", *Computer Law and Security Report*, 1989, 1,p.2

³³A worker in a Ford automobile factory in Detroit was killed by a robot (which was driven by defective software); the manufacturer of the robot was held liable to damages, see *Expertises*, 1984, p.30.

³⁴See C. Stuurman, "Product liability for software in Europe. A discussion of the EC Directive of 25 July 1985" in *Advanced Topics of Law and Information Technology*, ed. G. Vandenberghe, Kluwer, Computer/Law Series, no.3, 1989, p.127; see also C. Stuurman & G. Vandenberghe, "Software fouten, een 'zaak' van leven of dood", *Nederlands Juristen Blad*, 24-31 Dec. 1988, p. 1667.

³⁵See Calewaert's Report, op. cit., p.37; it was said during discussions in Parliament that another directive would be drafted at a later stage for the field of defective services; cf. supra about the draft directive.

³⁶G. Vandenberghe, "Software bugs: a matter of life and liability", *Celium Conference*, 27-28 June 1988, Brussels, p.5.

³⁷L. Dommering van Rongen, "Produktaansprakelijkheid en software", *Computerrecht*, 1988-5, p. 230.

³⁸Strict liability in the United States seems to be strongly linked with mass-production and mass-distribution, see C. Stuurman, op. cit., p.132; the directive does not attach as much importance to those circumstances.

³⁹L. Kramer, op. cit., p. 277

⁴⁰Calewaert Report, op. cit., p.17 & 27.

⁴¹It is true however that the preamble, in contradiction with article 2, states that "liability without fault should only apply to movables which have been industrially produced", but the binding provision of article 2 prevails.

⁴²Cf. infra.

⁴³On this discussion (software is a product or a service), see J. Hirschbaeck, "Is software a product?", *Computer Law and Practice*, vol. 5, 1989, p.154

⁴⁴H.C. Taschner, op. cit., p.259

⁴⁵J.L. Fagnart, op. cit, p.21

⁴⁶For a similar opinion on the issue of inclusion of incorporeal goods, see L. Dommering van Rongen, "Produktaansprakelijkheid en software", *Computerrecht*, 1988/5, p. 228; for an opposite view, see G. Vandenberghe, "Software bugs...", op. cit., p.6

⁴⁷WIPO definition, as given in C. Stuurman, op.cit., p.128

⁴⁸US Congress, Office of Technology Assessment, *Intellectual Property Rights at an Age of Electronics and Information*, April 1986, p.78

⁴⁹Idem, p.79

⁵⁰Those damages are more theoretical than real; they are only given here to help in making the distinction between the support and its contents and between the type of damages that each may cause.

⁵¹C. Stuurman, op.cit., p.139

⁵²Idem

⁵³It may be that other "official" sources could be mentioned, which we are not aware of.

⁵⁴Written Question no. 706/88 (July 5th, 1988) of Mr Gijs de Vries

(Dutch MP); Answer by Lord Cockfield (November 15th, 1988), on behalf of the Commission, O.J., no.C/144, May 8th, 1989.

⁵⁵Cf. supra.

⁵⁶The study, presented at a Euroforum conference in Brussels in October 1989, was published in R.G.A.R. (*Revue Générale des Assurances et des Responsabilités*), J.P. Tnaille, "L'application de la directive communautaire du 25 juillet 1985 (responsabilité du fait des produits) au domaine du logiciel", 1989 no. 11617.

⁵⁷When we mention "the application of the directive", it must be understood that we mean the application of the national legislation implementing the EEC directive in the Member States' law.

⁵⁸"Implementation of EEC Directive on Product Liability. An explanatory and consultative note. November 1985"; more recently, the Department also issued a "Guide to the Consumer Protection Act 1987".

⁵⁹This question cannot be analysed here, but our opinion would be largely converging with the Department's views on this particular issue; the directive was not meant to be used in cases of damages resulting from incorrect information; consequently, cases like the Jeppeson case in the US (flight information charts) should not bring about the same court decisions in Europe; see on this case, A. Laplante, "Liability in the information age", *Infoworld*, Aug. 18, 1986, p.37

⁶⁰Preamble, para 4

⁶¹Article 3.1 of the directive

⁶²cf. supra, the answer by Lord Cockfield.

⁶³"Where human life and individual property are at stake, only the highest standards are good enough (...). We see no reason why in the computer and information age those new (software) industries should be allowed to be more negligent with regard to safety than their traditional counterparts (...) if nowadays software producers really feel that they are unable to make software which meets the standards of safety required by the directive, they should seriously consider to stay out of those areas which can create a threat to life or property (...) There is plenty of money to be made in less dangerous areas; those who want to go into dangerous ones should know what they are doing", G. Vandenberghe, op. cit., p.12

⁶⁴L. Dommering van Rongen, op. cit., p. 231

⁶⁵Idem

⁶⁶G. Vandenberghe, op. cit., p.12

⁶⁷G. Vandenberghe wrote: "(...) was not such as to enable him to discover the existence of a defect (...)"; such wording gives the impression that the impossibility can be relative to the particular producer, whereas in order for that defence to be effective, the impossibility must be absolute.

⁶⁸We mentioned supra the existence of the SCOPE study (on software certification); the legal part of the study was completed in August 1992; see also K. Stuurman, "Legal aspects of standardization of information technology and telecommunications, C.L.S.R., 1992, p. 2 et s.

⁶⁹The producer's position regarding liability for negligence would be safer, in that there should be no negligence where all standards have been followed.

⁷⁰One example of a direct damage could be when a 'virus' in the software damages the hardware on which it is used (the hardware in this case is the only 'machine' actioned by the software). Two obstacles would however have to be passed in order to apply the directive: first, would such computer, in case it was used mainly for the private use of the victim, also be considered as being "of a type ordinarily intended for private use or consumption" (article 9.b)? Home computers are not as yet as common in Europe as they are in the US Secondly, a lower threshold of 500 ECUs would then limit the compensation awarded.

⁷¹A computerized control device of a manufacturing process may give clear indications or instructions to the person in charge, as to

actions to take regarding the manufacturing process.
⁷²We found a similar distinction in M. Scott, "Who is liable for software errors? Proposed new product liability law in Australia", *The Computer Law and Security Report*, 1989, 1, p.30: "A third factor is whether the software directly causes physical action or its output is mediated by a human. In active systems (e.g. real-time control of chemical processes and environments, and navigation systems), decision-making on matters of real consequence is delegated to an artefact. Since the scope for harm may be substantial, it might be particularly desirable for the risk to be borne by the 'production enterprise' and explicitly costed into the products. In passive systems some person uses the output, and existing laws, particularly negligence, may be sufficient to ensure that the software manufacturer has an interest in product quality".

⁷³In Europe, there is no case-law similar to **Halstead v US**, 535 F Suppl. 782 (Conn. 1982), where it was held that in certain circumstances, information could be considered as a product.

⁷⁴If a product incorporating some software causes damages due to a defect in the software, the victim may sue both the producer of the final product and also the producer of the software. If the former had no recourse against the latter, he would then bear alone all the risks involved in the commercialization of the software.

⁷⁵N. Birnbaum, "Strict products liability and computer software," *Computer/Law Journal*, vol. VIII, 1988, p.145

⁷⁶J. Hirschbaeck, *op. cit.*, p. 158

⁷⁷In such cases, the victim may sue both the manufacturer of the machine and the producer of the software.

BOOK REVIEW

COMPUTER SECURITY

Controlling computer security: A guide for financial institutions by James Essinger (FT Business Information Ltd, 1992 ISBN 1-85334-163-0)

In the author's words, "This management report aims to give executives in financial institutions the information they need to prepare an efficient and cost-effective strategy to maximize the security of their institution's computer systems."

The introductory basic definition allows the reader a starting point especially in the area of unauthorized interference of a computer installation, acknowledging that most computer security breaches are 'inside jobs'. Breaches in financial institutions are not well documented as companies are less than willing to publicize the fact. The information passing through financial institutions' computer systems is online and relates directly to money and is therefore particularly attractive to people bent on fraud.

"Packaged software, open architectures and skimping on security all present risks to the systems. Access directly to senior management by those responsible for security is important the report states. It goes on to highlight the reasons why many institutions do not publicize such breaches.

The elements in the computer security process are well detailed. High on the list is seeking the correct advice on insurance cover. The majority of insurers expect effective precautionary measures to be in place before they grant coverage and the insured institution could be expected to prove such measures were incorporated. The benefit of security reviews followed up by recommended enhancements and backed by senior management, is discussed. Personnel management and the dangers posed by staff is identified as an essential part of good computer security.

Procedural and technical controls are reported on in-depth. Four types of computer fraud are identified with details how institutions can initiate damage limitation if they have been subjected to fraud. From the advantages and disadvantages of types of investigator to subsequent investigatory avenues and collection of evidence, all is covered. The computer security officer will surely find this information invaluable.

There follows a comprehensive chapter on the legal aspects of computer security which highlights a reduced effectiveness of legislation if incidents go unreported. The report outlines the law's difficulty in defining and understanding computer crime and identifies areas where legislation is needed.

The ease of international data communications and the difficulties entailed such as a lack of legal standardisation is highlighted. The behavioural study of computer misuse is covered which should be of immense assistance to the managers and the personnel department during the selection process for DP personnel.

It is identified early on in the report that most computer breaches are perpetrated by authorized users. To complete the report, the final chapter offers some excellent examples of computer crime case studies. From executive fraudsters down to junior staff, through ATM, cheque tampering, mortgage fraud to wire transfer fraud, all astounding and worrying tales.

The report sets out its own ground rules and baseline for readers to work on in predominantly layman's terms in an easy to follow format. It achieves its aim. It places overall computer security firmly in management's lap and provides the executive with the decision making tool to understand and control it.

Definitely a book for the management library!