MANFRED WEITZ

The application of Strict Liability Theories in Tort Law to “Computer Software” - a comparative study between the Tort Law approaches in the “*United States of America*” and in the “*European Union*”.
(Under the Direction of Prof. THOMAS A. EATON)

Day by day we are used to dealing with computer software and many of us believe that our economies already depend on the functioning of such computer systems. Anyway, only a few of us have thought of the other side of computer software: the involved risks for the human body or other property when computer software is operating, e.g. when controling robots or diagnosis systems or just when calculating the dosis of ingredients for a practice medicine. To capture these risks, the thesis approaches the application of those Tort Law Theories which are based on the so-called “Strict (Products) Liability”, specifically if it is reasonable to apply such theories to computer software by referring to the background of the discussions in the United States of America and in the Euorpean Union. Most challenging is not that both legal systems have different foundations (US Case Law developed from the English Common Law of the medieval times, the European Continental Statutory Law from the ancient Roman Law), but that these inherent differences in structure and structuring still lead to different results, even on modern issues and modern environments. The thesis concludes: The application of Strict (Products) Liability Theories in Tort Law is useful and necessary to cover the risks of operating Computer Software, no matter whether the theories are applied in the United States of America or in the European Union.

INDEX WORDS: Tort Law, Strict Products Liability, Computer Software, Harm, United States of America, US, European Union, EU, Damages.

THE APPLICATION OF STRICT LIABILITY THEORIES IN TORT LAW TO "COMPUTER SOFTWARE" - A COMPARATIVE STUDY BETWEEN THE TORT LAW APPROACHES IN THE "*UNITED STATES OF AMERICA*" AND IN THE "*EUROPEAN UNION*".

by

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In dedication to my Parents and

my Fiance

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Chapter

A. Introduction

Computer software is a necessary tool to help govern economies and social life. Although nobody doubts the importance of software and the aspect that its importance will rise more and more in the future, only a few theories exist in the current law systems - in the U.S. and abroad in Europe to approach scenarios of liability in which software products trigger harm.

This thesis concentrates on the first and most important aspect of a strict product liability for software: the step to incorporate a liability for software/information into the existing regulatory equipments of both legal systems, that of the United States and that of Europe dealing with a strict liability in tort to approach similar problems. Due to the fact that strict liability in Europe is based only on a directive of the European Union, the thesis concentrates as an example - if necessary from time to time - on the German transformation of this directive. The reason is easy to explain. Generally directives of the European Union are not self-executive. Without getting here into the depth of the problem (that is the application of diverse types of European Union law in which exceptions to this principle come into play), for the purposes of this subject, it can be taken as granted that this directive, namely 85/374/EEC, is not self-executive. Furthermore, the member states of the European Union are - in case of the application of statutory directives - only allowed to chose among the best means of transformation in national law but not among different defini-

tions (as they would if they took their own interpretations); thus, the here chosen way of getting into the European Union law by taking from time to time the German transformation is not better or worse than to choose the transformation of any other member country. At all, the application among the member states of the European Union in the same manner is also safeguarded by the ultimate discretion of the European Court of Justice in such cases where underlying European law is involved. It functions then as the last court of appeal so that a national deviation ruled by national law or by an interpretation of a national court can be brought align to the European Interpretation. However, this just described system of checks and balances for the transformation of European Union law in the framework of the European Union guarantees the same “common sense application” among the member states, now and in the future.

This European framework is also effective for Great Britain which applies Common Law principles and insofar develops as a European approach also indirectly the British Common Law; this development can be further explained in the following way: the more European Union law will be passed, the less the Common Law will play a role in the European Union. A development that is simply based on the fact that all member states except Great Britain (without Scotland where also the Civil Law rules) are complying with Civil Law principles and its basic ideas. Taken into account that European Union law today influences in fact about 90% of the national legal issues of each member state (legislative as well as governmental decisions), one cannot argue any longer that this effect on the British system is only a small one. In fact it is the opposite.

Since a Civil System needs generally a longer period of time to react to new circumstances (based often on the need of new statutory sources and resources), this thesis will try to highlight the difficulties in the Civil System and its approaches to strict products liability in torts for software and then, further, the thesis will address how and if the approach in the United States of America is really different or just struggling with the same problems, maybe, on another level. The US-approach hereby can employ its experience in the application of strict liability doctrines, a benefit that the Civil Law System never had (especially when it comes to totally new issues that concern technical developments today and in the future). As mentioned *supra*, even Great Britain's experience in this area of law has only a minor influence to the whole situation in the European Union.

Two hypothetical fact patterns are to conclude this introduction. Both examples should clarify the fact patterns the thesis is dealing with.

Example 1:

High-tech devices as *Nuclear-Spin Tomographs (MRTs)* for magnetic resonance imaging (MRI) [1] or *Computer-Roentgen-Tomographs (CTs)* for computerized axial tomography Scanning (CTS) [2] are nowadays the standard equipment of hospitals to provide and safeguard sufficient and adequate medical diagnosis and treatment to patients. The use of these devices is so advantageous that no medical doctor would dare not to use them in

[1] For most current and accurate information about functioning, benefits and dangers (exposure to radiation) of MRTs, *see* American Society of Radiologic Technologists at www.asrt.org/asrt.htm - "Computed Tomography" (ASRT Education and Research Foundation, Albuquerque, NM).

[2] *Id.* also for CTSs.

appropriate situations; anyway, the following problems appear: both the *MRTs* and *CTs* consist of software that controls these apparatuses. The functions of the software are basically: (1) to evaluate and to present the gained data for the analysis and (2) to control the Roentgen beams (CRTs) or magnetic fields (MRTs) in direction and intensity. It needs not to be stressed further that every malfunction in this controlling software can have a hazardous impact on the patient's human body. The later following technical analysis of software will make present that we are facing right now new problems that cannot be solved without approaching real strict product liability.

Example 2:

The second fact pattern on which the thesis is focussing is the high complexity which computer software often consists of. This complexity in programmed knowledge triggers confidence to the user, confidence, that is frequently over-evaluated to a dangerous extent. In the real life we are confronted with this kind of fact pattern when a medical doctor has to find a specific treatment for a patient in an emergency and consults a computer program to support him at least with the information how to encounter the patient's symptoms. The more know-how the software binds, the more the doctor will follow its provided analysis and suggestions of treatments; the more time goes by, the more complex will be getting both the medical analysis and the information that the software has to consider; this reveals an up-coming problem in the future: human beings are depending more and more on a transferred knowledge - even if it is only given to software to gather information. But if just one puzzle of the entered information is wrong, the outcome - either in form of a provided wrong information or suggestion - is influenced and can eventually have hazard-

ous impacts on the patient's health. This scenario is totally different from the first example because here the doctor himself and not the software is treating the patient. The reason to bring up this example is to make clear that software-design and -programming can have even indirectly a strong impact on third persons (the customer), when it is used only as an information providing tool.

Chapter

B. Addressing the issue at large

The term "*product liability*" is mentioned in many areas of law, so in theories as to the law of contracts, torts and even in theories of public law e.g. when public law imposes duties on the production, the distribution or the marketing of a specific product. Generally spoken "*product liability*" is a legal theory that imposes liability on the manufacturer or seller of a defective product.[3] Thus, for purposes of addressing the precise goal of this thesis, term and issue need to be more specified:

I. Terminology of 'Product liability'

1. Definition in Contracts

"*Product liability*" in the law of contracts means nothing else than that if the item of sale is deviating from the condition promised, the item of sale is regarded as defective and the seller has to render a mostly pre-defined performance to the buyer. The reason why the seller is obliged to do that can have several grounds: a contractual agreement, provided guaranties, written or implied warranties (e.g. mandatory under the U.S. Magnuson-Moss-Act 1975 §§ 103-108 if its prerequisites are met).[4]

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[3] BLACK'S LAW DICTIONARY 1225 (7th ed. 1999) ("products liability"). *Cf.* MacPherson v. Buick Motor Co., 217 N.Y. 382, 111 N.E. 1050 (1916).

[4] *Cf.* ALAN E. FARNSWORTH, LAW OF CONTRACTS § 4.29, 319 (3d ed. 1998).

This scenario is exactly the same if - in comparison to that - the law of a member state of the European Union comes into play (e.g. the German Civil Code contains comparable provisions in §§ 459-480 dealing with mandatory implied warranties and beside that also with contractual warranties and guaranties).[5] Even if such a scenario is not based on transferred European Union law, thus only on individual member state law, all of the other member states have comparable provisions in their Civil Law Codes.[6]

2. Definition in Torts

The law of torts has a different approach to the issue of "*product liability*". The law of torts is looking at the product liability issue as a kind of general responsibility, that means responsibility of the product manufacturer to the consumer in cases in which defective products cause harm.[7] This responsibility is reflected by the mirror-picture, that is, to gain money by marketing these products to the consumer. Pursuant to this, the law of torts employs also a social and protective function by concerning the consumer's needs and demands in relation to the manufacturers environment and possibilities to foresee risks and accordingly to protect the consumer by using his superior knowledge as to the product and the ways of its production. Altogether the law of torts tries here to find a reasonable relationship between (at least) the manufacturer's responsibility and liability (on the one side) and the reasonable expectations and the need of protection of the consumer markets (on the other). Exactly this relationship can be found not only in the different states' law of torts, but also in the national laws of torts of the member states of the European Union. So

[5] PALANDT/HEINRICHS, BÜRGERLICHES GESETZBUCH §§ 459-480 (60th ed. Munich Germany 2001).

[6] *See* e.g. the comparable incorporations of warranty provisions in the French, the Italian and the Austrian Civil Codes.

[7] DAN B. DOBBS, THE LAW OF TORTS § 352, 970 (1st ed. 2000).

far as this general distinction on the field of products liability law is concerned, there is also no difference in the approaches of both areas of jurisdictions: neither in the national law of the member states of the EU and in the new product liability concept established on the supranational European Union level itself, nor in the law of torts of the states' in the US.

3. Relationship between both and starting point

The law of contracts has in both areas of jurisdictions (US and EU) an inherent restriction, that is, contractual agreements generally work only between two contractual parties and do not generally include third persons into the class of protected people. Of course, based on fairness this concept of privity is sometimes surmounted to a specific extent if a third person on the side of the buyer has a so close quasi-contractual relationship to the buyer that the law assumes that a different treatment of the third person in terms of liability is neither reasonable nor just.[8] But still it remains the problem that in most of the cases a third person will not be included in liability issues as a kind of a so-called "innocent bystander". Furthermore, the examination of the software liability issue will show later that especially by focussing on its diversity of components and interactions, we cannot rely on close relationships without coming in conflict with well-settled developments and achievements in the law of contracts, in the US and abroad. Beside this and beside the fact

[8] *See* the developments of the "Third Person Protection" in Tort Law from 1953-2000: WILLIAM. L. PROSSER, SELECTED TOPICS ON THE LAW OF TORTS 396-402 (1st ed. 1953) to DAN B. DOBBS, THE LAW OF TORTS 168-170 (1st ed. 2000); *cf.* WILLIAM G. EDWARD, TORT LAW IN AMERICA 168-76 (1st ed. 1980); *cf.* WILLIAM. L. PROSSER, THE LAW OF TORTS 534-35 (4th ed. 1984); *cf.* case developments from Winterbottom v. Wright, 10 M. & W. 109, 152 Eng. Rep. 402 (Exch. Pl. 1842) to MacPherson v. Buick Motor Co., 217 N.Y. 382, 390, 111 N.E. 1050, 1053 (1916) (as to the application of the so-called Privity Rule).

that also “economic loss” can be claimed under the law of contracts, the liability is all the time related to the agreement - the promises made under the contract - and will find their roots based only in these promises; and of course, this function has to be a barrier to define a way to separate contract law from tort law and especially from the further liability risks of the law of torts for the seller. Even if this could not be established ultimately, the pure liability assigned by the law of contracts could be restricted by contractual agreements whereas the liability assigned by the law of torts could not; or only in a certain extent. This implies that the scope of this thesis is based on the presumption that there is still a separation of the law of contracts and the law of torts. For all that reasons mentioned *supra* this thesis will concentrate on the strict liability in torts for software products as described.

II. Product liability and technical appearances of software

The next step is to clarify what we understand and define as “s*oftware*”. Nowadays we divide software by form, function and effects. This takes place to be able to pick out and discuss specific software characteristics and their influence to the environment.

1. Horizontal structure (Form)

a) Informing Software

The first form in which software appears is only to be a container of pure information. This software can be displayed by other application programs and cannot be distinguished from pure information that are stated in books, newspapers and magazines or broadcasted information on television or on the radio. This kind of software has an inactive status and is used only by other programs that grasp the information at specific addresses of the con-

nected internal and external memories. Its value can be evaluated by the reader only with the support of other programs that display the information to the reader. This can happen on hardcopies (e.g. printed on paper) or softcopies (e.g. shown on monitors).

b) Supporting Software

Supporting software is that kind of software that operates with all kinds of incoming and outcoming information, combines and computes them to a specific result. This software works in two ways. First, supporting software uses information that is provided already by the programmer (informing software), second, supporting software uses information that is provided later (typed in/entered) by the user himself to accomplish a specific result. In technical terms, the user does nothing else than to add further information to the still existing program and becomes technically also a status of a further programmer of this program. The most-known applications in this field are used for text-processing, table calculation and databases.

c) Controlling Software

The third and last form of software transfers and renders the computations made by the supporting software into a result that directly effects the environment outside the computer hardware. It sends out electronic impulses e.g. to monitors, printers or other mechanical devices as industrial robots (movements) or medical devices (movements or some kind of beams).

2. Vertical structure (Function)

Whereas the just displayed horizontal structure focuses on the abstract tasks assigned to (the) three types of software, does the vertical structure concern the hierarchy among them.

a) Interaction and Level indication

The hierachy in which software types are interacting are generally much more important than the assignment of abstract tasks to software types. The combination of software types makes out of single software components a software that is then technically able to affect its environment. The importance of this distinction derives basically out of the fact that the levels of interactions are more variable than the types of software. A software can consist of ten or more components in a hierarchy system but it has still only three types of components (forms). The weight in this distinction reveals the way of finding and using interfaces between two software components to locate not only deficiencies but also errors on one side or the other.

b) Replacement issue and Similarities

This type of function of software addresses the issue that since 1960 software systems are replacing more and more (pure) mechanical devices. Hereby manufacturers of mechanical devices have found ways to establish effective interactions between some parts of their (pure) mechanical devices and software. Today we encounter every day almost always mechanical devices that are accompanied by software to control them - at least partially.

3. Working structure (Logic)

The third category of structures refers to the logic that is assigned to the software. This means that for certain reasons the programmer does or does not implement some routines into the software program that transfers some kind of discretion to the software, defining a framework in which the software has discretion to act or react.

a) Fixed logic

The standard software type is based on the so-called "*fixed logic*". The fixed logic is based on a strict system of operations/commands. These operations are using pre-defined (fixed) equations and pre-defined (fixed) information. In this case it does not matter who the supplier of the information is. Information can be both provided by the programmer and provided by the user. Fixed logic has the benefit that its way of behavior can be basically forecasted. Basically, because the general presumption does not include the unpredictable risks triggered by the vast internal interfacial interactions that take place once a computer program is running and working off all the commands given by the programmer. This is only the beginning of the state-of-art in programming. Today programmers are implementing additional software to control the basic software in order to reduce these risks. Even in this case the supervising software is still limited to supervise only some certain routines of the basic software. It cannot detect or trace further problems out of this range because the problem here is to tell *"software"* that "*software*" does behave wrongly. How can software does this when it cannot detect which command is a good or a bad one? The computer program itself is all the time confronted with other commands - a variety of 0 (switched off) and 1 (switched on). At all we can summarize at this point that beside these

mentioned unpredictable risks the behavior of software can be forecasted whenever a fixed logic is implemented.

b) Fuzzy logic

The next step of the state-of-art in software programming is the type of software that employs the so-called *"fuzzy logic"*. Fuzzy logic refers to the way in which a computer program is using information once it approaches provided information either by the data base itself or the user as the supplier of this information. The working principle can be described in the following way: common software uses all information, that is, collectable information along a pre-defined and firm way, and each software command is referring to and considering all the information that is provided - a process that takes a lot of time if the provided data is exceeding the speed of the provided hardware so that it has a significant and inconvenient effect on the whole speed of the system. Contrary to that: fuzzy logic uses only a fraction of the provided information to be faster than the classic fixed logic. That would usually mean: no reasonable user ought buy or more generally spoken acquire this fuzzy logic software. But the software markets show another reaction; fuzzy logic is used a lot to accelerate computer systems. At all, the very competitive software markets lead to uncertainties in the forecasting of software reaction. Nevertheless, usually the fuzzy logic is restricted by a frame in which it can work. At least this type of frame gives the user and the market the confidence in fuzzy logic working principles. The reality is often: the user even does not know that he is working with software using a fuzzy logic to compute the tasks assigned to it.

To explain the working principle of fuzzy logic software at large does not further explain why programmers then use the fuzzy logic to solve problems, especially if the fuzzy logic by nature is much more unpredictable than software based only on a fixed logic. This question is easy to answer. The speed in which today's computers work is still too low for many operations that need a much faster decision than computers today are able to perform/render. In essence: continuous progress from year to year in developing and increasing the working speed of computers, has not really an impact in favor of against the decision to implement "*fuzzy logic*" in current and future software architecture; programmers are developing high-tech software in the same pace in which manufacturers of computer hardware are developing faster computer hardware: the demands of customers are increasing accordingly so fast that software producers have to react. Still: speed is decisive and as far as the implementation of fuzzy logic is feasible, software producer will use this technique.

c) Artificial logic

The last type of software logic is named "*artificial logic*". Artificial logic has two forms and either of them has further two sub-logics that have to be addressed in order to assess the meaning of them for product liability issues that is the major concern of this thesis. Hereby we have to divide and precise the term "*artificial intelligence*" in its initial meanings.

aa) Expert systems as the first step to artificial intelligence

The first type of artificial intelligence is incorporated in so-called "*expert systems*". Expert systems are named along computer logics that incorporate the knowledge of some or many experts. The bigger the problems to solve, the more complex are these kinds of systems. This sounds quite satisfying in the first place but it bears huge risks in its actual application (we have here just a kind of combination of the mentioned fixed and fuzzy logic: the fixed logic - because of the pure information that reflects the vast knowledge as to a specific matter of one, two or even more experts and the fuzzy logic - because of dealing with the mass of information these systems have to consider and to compute).

The high risks with these expert systems are located at another area. Risk assessment is here much more difficult than with the fuzzy logic itself because the risks do not derive here primarily from the combination of fuzzy and fixed logic. The high risks of expert systems derive out of the huge collection of information thatn often cannot be assessed and handled by the users appropriately, even not if they are specialists. Very often the time is not given to proceed further research on a case (e.g. with a medical treatment of a disease). This situation couches then often the user (e.g. a medical doctor) in a quite confidential situation that can easily overstretch the whole performance of such a system. This in particular makes expert systems dangerous for all participants: e.g. in the mentioned medical field it is dangerous for both, the doctor and the patient.

bb) Self-acting programs as the next step to artificial intelligence

Whenever computer experts are talking about "*artificial intelligence*" (AI) in the meaning of "*real artificial intelligence*" then they are talking about "*AI - Creative thinking*", "*AI - Genetic Algorithms*", "*AI - Machine Learning*", "*AI - Blackboard Technology*", "*AI - Modeling and Simulation*" and especially "*Neural Networks*". Nobody really knows exactly how far the progress is right now (in the year 2001) in the developments of self-acting and self-thinking programs; Software companies [9] and institutions [10] dealing with real AI software are announcing from time to time progress but no break-through yet. However, for the purpose of this analysis we have to accept that AI programs, even if available to "*some*" extent in research projects, are at least available not yet for the consumer markets and thus should not be our main focus when we consider damages by software programs to the consumer. For this reason only a very brief explanation to real AI approaches should be given: Today AI is basically separated in two broad areas, the neural network branch and the genetic algorithm branch. With "*neural networks*" software programmer try to copy the functioning of the human brains and the interaction of their cells, with *"Genetic Algorithms"* they try to evolve self-creating software intelligence out of genetic and generic command structures.

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[9] To name only a few: The Ward Systems Group, SPSS Inc., Neusciences Inc., NeuroDimension Inc., MegaPuter, Gensym, The Flexible Intelligence Group, Calif. Science Software, BioComp Systems Inc., Virtual Mind, Triant Technologies, Promised Land Technologies, Predictive Dynamix Inc., Neural Ware Inc. Network Cybernetics, Mikuni Berkeley, Intelligent Machines, Information Discovery, IBM Corp., Hess Consulting, Gordian Institute, Churchill Systems, American Heuristscs, Adaptive Network Solutions research Inc. and AbTech Corporation.

[10] To name only a few: MIT AI Laboratory (Mass., USA), Univ. of Edinburg Dept. of AI (UK), Lockheed AI Center (USA), Univ. of Trondheim Dept. of Informatics (Norway), AI Center SRI International (USA), German Research Center for AI (DFKI, Saarbruecken, Germany), Neuroengineering and Neuroscience Center (NNC/CTAN) at Yale Univ. (USA).

The only idea we should have in mind when AI software is concerned is that developments here are influencing the developments of expert systems and fuzzy logic routines which we actually have to consider more thoroughly by assessing the necessity of strict liability for software and the precise legal framework in particular which could or should cover these software liability issues.[11]

III. Influence of Intervening law

Whenever we are approaching "software" under liability law (e.g. torts) then we have to accept that this law could finally establish a liability - a liability for information.[12] Even if software appears and behaves differently than media before, the core of software consists of information only. This urges the analysis to concern all surrounding law that reflects to all of the law that opens or forecloses the ways to liability for provided information.

1. Constitutional rights (Freedom of Speech)

The most important law which intervenes here is indisputably the Constitutional law and its guaranteed fundamental rights. These fundamental rights shall guarantee not only democracy but also the chance to develop the relationship between the people on the one side and the state/government on the other. Even if these fundamental rights were planned and imposed in the first place to prevent specific acts of the government against the people, these fundamental rights developed; nowadays interpretations of fundamental rights are also used to impose duties of the state to act in behalf of those people who have been

[11] *See supra* pages 1-6.

[12] *Cf. supra* pages 9-17.

harmed by other people who tried to hinder them exercising these rights. Thus, the prior defending function of these fundamental constitutional rights has been added and rendered by a claiming function to act in their behalf developed out of the Due Process and the Equal Protection Clauses.[13]

Over all this development of the Constitutions has various effects. However, it is not the task of Constitutions do guarantee a full-band protection field except a minimum standard of protection - no matter if the state or other people are perpetrators as to a specific fundamental right. To stay here with the more specified problem that liability for information touches the Constitutional right of free speech, this right of free speech is also restricted e.g. by (statutory) penals and tort provisions/doctrines that should prevent people harm to other people's credibility by insulting or offending them by words or by the spreading of wrong information about them without any permission (e.g. defamation/libel/slander). If it comes now to the question whether liability for provided information should be established or not, we are considering nothing else but the same. We are questioning whether it is necessary to ask the state (here the claiming function as to the courts) to intervene in people's behalf to protect them from promulgated information/software of other people that caused harm by applying/using these information. This comes down to the fact that a liability cannot be excluded at all, even not if "only" provided information are in question. Therefore, the more challenging question is: when do we reach the barrier in establishing liability and when do we pass illegitimately this barrier by interfering too much with the fundamental right of free speech? This question has to be answered, but to balance out the

[13] *Cf*. JOHN NOWAK & RONALD ROTUNDA, CONSTITUTIONAL LAW, Ch. 13, Ch. 14 (5th ed. 1997).

correct factors for such an assessment, the analysis has to examine first the specific issues of liability for software, especially the fact patterns in which a customer would be almost helpless without any further indirect protection as remedies e.g. given by the law of torts.

2. Intellectual Property rights (Copyright and Patent law)

The next area of law that crosses the borders of information liability law is certainly the area of law called "*Intellectual Property Law*". Although the overlap of these two areas is such as big as through the Constitutional law, the underlying ideas are totally different. So far as Intellectual Property law is concerned, it was made to protect the author's, thinker's and inventor's interests in having the intellectual work protected so that it gives financial incentives and support to create one. The protection of these intellectual works was established world-wide because of the side-effects that the public gets benefits from having competing thinkers and inventors: every body can be the first, so that IP-monopolies world-wide could have been nearly abolished sufficiently. Nevertheless, the totally different underlying aspect of the protection of thoughts against copying or misuse on the one side and the liability for wrong information on the other side are not interfering and thus cannot be deemed as crutial.

The reason why an area of law like products liability law (which tries to impose liabilities for information) is all the time accompanied by questions of Intellectual Property Law is much more a political issue based again basically on Constitutional issues rather than a failure to establish protection by Intellectual Property law itself. The greatness of this issue is grounded on the wealth and untouchability of a huge industry sector consisting of

inventors and thinkers because the Intellectual Property Law helps to render protected ideas into money which is still the most challenging incentive for them to create such. Business lobbyists fear legal phenomenons as "*information liability*" and use it as a shield to prevent such and related developments. The fact remains that this is only the half of the truth. The other half is much more that liability could always covered by agreements between thinkers/inventors and the companies that use the idea to market it. Even if not, fact is still, that liabilities established in the consumer market places are directed only on the legal entity that takes the risks to bring out a product to the consumer, no matter if it is an automobile or another - however created - product. These risks are on the manufacturer and the distribution, not on the inventor or thinker who works in behalf of a company or supplies only an idea to them. Anyway, also in these scenarios we have to consider that a self-employed thinkers or inventors could be subjected to liability. Though, the companies that uses his idea transfers it (maybe) to another environment and changes so automatically the presumed effects and then eventually the liability scenarios. This seeks obviously for a borderline for liability.

3. Contract law (Warranties)

As we have seen already (*supra*) by addressing the issue at large [14], the law of contracts and the law of torts are closely related whereby the borderline is often hard to define. That has led to assumptions that tort law is sometimes establishing unwanted (quasi and purly factual) contracts when reasonableness and common sense demands this in relationships.[15] Nevertheless, contractual warranties are different and therefore should be sepa-

[14] *See supra* pages 6-24.

[15] *Cf*. DAN B. DOBBS, THE LAW OF TORTS § 320, 866 (1st ed. 2000).

rated from the strict product liabilities imposed by the law of torts. The difference between both areas of law can at least be based on the fact that the special feature of warranties stems from the strong relationship between the contractual parties.[16] These parties choose each other, they choose the confidence put in the promises, the risks and the unpredictable outcome of the bargain itself. Whatever they attempt, the contract is born to furnish their (contractual) relationship. Even if then third persons are covered by warranties by what fact ever, contractual warranties request a close relationship between the third person and at least one of the contractual parties.[17]

When we are talking about strict products liability, we are talking about the definite impact and the risks of products in the consumer markets. Consumer markets are reflecting not only the typical and necessary relationship between the producer of a product and the buyer connected through a chain of distribution. Consumer markets are much more. Consumer markets are standing with "consumption" which means they are dealing with people that consume the products. Thus, the product is not only sold as stated in the contracts but is also influencing them in any ways imaginable. However, when the law of contracts is intervening the law of torts, then sometimes because it is overlapping, and, sometimes because it is supporting the needs of the tort law concepts. But still, without any relationship, the law of contracts refuses to come into play. Consumer protection has to be based on firm roots and if the law of contracts is matching with the law of torts -

[16] *Compare* ALAN E. FARNSWORTH, LAW OF CONTRACTS § 10.1-9, 671-99 (3d ed. 1998) (sometimes as a combination of a derived buyer-claim and the foresseable consideration of the third person against the seller, sometimes as a direct claim of the third person against the seller on the same grounds, *see id*.).

[17] Which are then sometimes called "third-person" beneficiaries or "incidental" beneficiaries, *compare id*. This is of course a question when it is just in terms of foreseeability to extent the responsibility of the seller by reasonable grounds.

good. If not, the law of torts has to provide means of equal protection - at least on a minimal and fundamental basis reflecting the economic interests that the producing industry stakes in the consumer. This means nothing else than that the law of contracts is not changing the law of torts. The law of contracts is extending the law of torts to a higher standard that goes sometimes much further than the law of torts by establishing higher standards of the consumer market as to safe products when it can be deemed that unsafe products are defective products in the contractual sense.

4. Related supranational norms in the EU System (EU only)

A phenomenon that is solely a problem of the Strict Product Liability in the European Union are European norms at the same level as the EEC Directive (which first established a common strict product liability among all member states of the European Union). Here to name are especially: the Product Safety Directive 92/59/EEC[18] of 1992 and, even so important, the official draft of a Service Liability Directive [19] promulgated in November 1991. Both stand beside the Strict Product Liability Directive 85/374/EEC as a part of one consumer safety conceptual framework that the European Union tries to establish since the beginning of the first developments in 1968.[20] Before dealing with these specific EU-approaches it can be said that the USA does not have to deal with these difficulties at all. The USA neither has established a federal strict products liability nor has assigned a specific court that functions as the last instance to rule on product liability issues. More-

[18] EC COUNCIL, DIRECTIVE ABOUT THE GENERAL SAFETY OF PRODUCTS, 1992 O.J. (L 228) 24 f.

[19] EC COMMISSION, PROPOSAL FOR A SERVICE LIABILITY DIRECTIVE, 1991 O.J. (C 12) 8 f.

[20] TASCHNER & FRIETSCH, PRODUKTHAFTUNGSGESETZ UND EG PRODUKTHAFTUNGSRICHTILINIE, EINLEITUNG Rn 171, 95 (2d ed. Munich Germany 1990).

over, tort law today might be one of the last fields of law in the USA that is still ruled traditionally by state law - by each state differently, maybe influenced in some way by other states through some persuasive authorities.

Vice versa the European Union has assigned all disputes to the European Court of Justice as the last instance so long as a problem appears under European law and is not sufficiently solved by the various national court systems. The European strict product liability directive 85/374/EEC is so-called supranational European law. Even if it is transferred into national law by the member states, it still remains as the same common European law as it is established by the directive 85/374/EEC. Thus, when the European Court of Justice has to rule on an issue of the interpretation of European law, it is required to consider all European law that could render conflicts later with other interpretations. These overlapping interpretations are the problem with which the analysis has to deal in terms of interpretations when it is necessary and appropriate to do so. Otherwise these problems would hinder not only a better and reasonable solution but also could trigger conflicts in time among European supranational law which then would make it inconsistent. However, it does not make sense insofar to discuss the European Safety Concept separately without exploring the core of the problem of the interpretation: the definition of “products” under the European Strict Product Liability Directive. This is the only feasible way to confine the influence that other European supranational law has on the European Strict Product Liability.

Chapter

C. Basis of 'Strict' products liability in the US and in the EU

The first way to approach the two concepts of (Strict) Product Liability in the US and the EU is to display the underlying ideas both systems are following today. Basically questioned is hereby, how 'strict' actually the 'strict liability concepts' are and how both systems try to define the term of 'products' in their terminology used.

I. Strict liability as a fundamental concept

1. 'Strictness' and 'Liability' concepts in the meaning of US tort law

Nobody today can really answer the question when the idea of strict liability evolved in the common law, if it was even under the early English common law in the medieval times or later under the influence of the modern times and the associate industrialization of production.[21] Even though there is also a dispute from what standpoint out the strict products liability doctrines began to start: evolving out of the law of contracts or out of the law of (tort) negligence?[22] The Restatement (second) of the law of torts promulgated by the American law Institute in 1965 gives here a quite good overview over the generally accepted authorities that were decided under the US common law until that time:

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[21] *Compare* WILLIAM G. EDWARD, TORT LAW IN AMERICA 17 (1st ed. 1980) with reference to "Absolute Liability" based on Jury decisions in which it was partially unpredictible to esteem the standard of its decision due to the assigned discretion.

[22] *Id*. at p. 168; WILLIAM. L. PROSSER, THE LAW OF TORTS 690-692 (4th ed. 1984).

a) ALI Torts Rest. (second) concept of 1965 (with case law)

Historically first in the US was the ALI Rest. (second) of the law of torts in 1965 by making the approach to address the issue of 'strict products liability' as an arising rule. Then incorporated in the Restatement of the law of torts, as only one provisional rule,

§ 402A (1) states:

"*One who sells any product in a defective condition unreasonable dangerous to the user or consumer or to his property is subject to liability for physical harm thereby caused to the ultimate user or consumer, or to his property, if (a) the seller is engaged in the business of selling a product, and if (b) it is expected to and does reach the user or consumer without substantial change in the condition in which it is sold.*"[23]

Although §402A was incorporated into the Rules and Principles of the ALI Rest. (second), in Division Two ("Negligence"), it was intentionally separated from the general restatement as to negligence. There it was used not only a specific subtitle "*Topic 5 - Strict liability*" but also an additional (explaining) paragraph,

§ 402A (2), in which was clearly stated:

"*The rule stated in Subsection (1) applies although (a) the seller has exercised all possible care in the preparation and sale of his product, and (b) the user or consumer has not bought the product from or entered into any contractual relation with the seller.*"[24]

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[23] RESTATEMENT (SECOND) OF TORTS § 402A (1965).

[24] *Id.*

Never before was this spoken out that clearly: it seemed that the US law of torts was beginning at least with the underlying case authorities to establish an era of wide-spreaded strict liability - that means without any proof of fault.[25] This interim presumption will be important for the further analysis of the European liability system as we will see later.[26]

b) ALI Torts third Rest. (Products Liability) concept of 1998 (with case law)

In the meantime - between 1965 and 1997 - courts in the US developed another starting point - away from this first approach of real strict liability.[27] Eventually they returned to the former approach (basically before the second Restatement) which they had developed erlarier as to products liability: liability, based on negligence.[28] This conclusion has only one exception, that is, that US courts left a real strict liability concerning product defects that are a result of the performing (manufacturing) process.[29] The other and most decisive defects of products at all, those based on a defective design - so the thinking process that led to the ultimate shape and risks - are today exempted from a real strict liability starting point.[30] Moreover, this category of "design defects" and the third (closely

[25] *See* Greenman v. Yuba Power Products, Inc., 59 Cal2d 57, 27 Cal.Rpts. 697, 377 P.2d 897 (1963).

[26] *See* page 24.

[27] J.A. Henderson Jr., Judicial Review of Manufacturers' Conscious Design Choices: The Limits of Adjudication, 73 COLUM. L. REV. 1531; DAN B. DOBBS, THE LAW OF TORTS § 354, 977 (1st ed. 2000); *cf.* MODEL UNIFORM PRODUCT LIABILITY ACT, 44 FED. REG. 62714 (1979) (which was the promulgated guideline for new product liability statutes for the states given by the U.S. Commerce Department in 1979; many states then began in 1980 to pass restrictions esp. on design defects).

[28] *Id*.

[29] DAN B. DOBBS, THE LAW OF TORTS § 355, 979-80 (1st ed. 2000).

[30] *Id*. at 980-981.

related with this) category of “omitted instructions or warnings” are today handled by the courts only in a way which resorts to fault principles and theories.[31]

The consequences of the new approach are precisely captured by the third Restatement of the Law of Torts - promulgated in 1997. The third Restatement shows mainly two things: first, the product liability issue is handled by the ALI as a separate chapter of the Law of Torts which reflects the importance and the attention that courts devoted to this problem between 1965 and 1997. Second, this chapter of “*product liability*” of the third Restatement of the Law of Torts consists of not less than 20 paragraphs and shows hereby the wide area of problems which US courts had to deal with and the crucial way in which they developed the current “*product*” liability in the light of fault and real strictness. However, although § 1 Rest. (third) of the Law of Torts (1998) states the liability some similar to the second Restatement by stating,

> “*One engaged in the business of selling or otherwise distributing products who sells or distributes a defective product is subject to liability for harm to persons or property caused by the defect*”,

the § 2 Restatement (third) of the Law of Torts (1998) clearly deviates from the 1965 approach by separating the three already mentioned categories: (a) manufacturing defects, (b) design defects and (c) inadequate warnings and instructions. As we have seen the issue at large of this analysis is focussing on liability for information and information technologies [32], specifically the thinking process - so the design process which is actually the

[31] *Id*. at 981.

most decisive. Having this in mind, the third Restatement (Products Liability) addresses the liability for design defects in § 2 (b) in the following way:

§ 2 (b) third Restatement:

"*A product is defective in design when the foreseeable risks of harm posed by the product could have been reduced or avoided by the adoption of a reasonable alternative design by the seller or other distributor, or a predecessor in the commercial chain of distribution, and the omission of the alternative design renders the product not reasonable safe;*"

The official comments of the ALI and the analysis of the court decisions concerning the products liability of the Law of Torts do have the same result: today's US product liability law in the framework of the law of torts finds its core solution in the way back to the liability based on fault.[33] Even more, it adopts beside the ground theory of foreseeability also further developed core principles as the B-PL Test for detecting the "*reasonable alternative design*" of a product;[34] what is reasonable or not in designing a product, is basically captured by the comparison between the predicted burden (B) (basically costs) of designing the product differently, and the probability (P) of a loss as well as the costs of that loss (L) in case the product triggers an actual damage through its predicted use.

Due to the fact that the analysis has to consider the pivotal issue of "*information liability*", it has to include that the handling of information technologies could trigger also synergy

[32] *See supra* pages 9-17.

[33] *See supra* note 27.

[34] *See supra.*

effects between the manufacturing and the design process. Whether or not we are really able to draw eventually a line between the manufacturing and the design process - and thus between design and manufacturing defects - in case of software to deal appropriately with the consequences, will be a question that we have to face later. Anyway, to be able to encounter these problems later, the analysis has to consider the current (strict) approach of the US law of torts as to manufacturing defects. So far as we can take § 2 (a) Rest. (third) of the Law of Torts as a reference to the general attitude of the courts to decide,

> § 2 (a) says:
>
> "*A product contains a manufacturing defect when the product departs from its intended design even though all possible care was exercised in the preparation and marketing of the product"*[35],

which obviously underlines and confirms our first analysis to the real strictness of the liability concerning defects of the product caused by the manufacturing process itself (beside the design and warning/instruction issues).

c) Developments 1997/1998 - today (Case Law)

It can be said that US courts at large followed nowadays the theories developed until 1997 to the product liability as it was already incorporated and handled by the current law of torts at that time.[36] Everything that happened in the meantime between 1997 and 2001

[35] RESTATEMENT (THIRD) OF TORTS, PRODUCTS LIABILITY § 2 (1998).

[36] *Compare* Barton v. Adams Rental, Inc., 938 P.2d 532 (Colo 1997); Ogletree v. Navistar Int'l Transp. Corp., 269 Ga. 443, 400 S.E.2d 570 (1998); *compare* hereto also Warner Fruehauf Trailer Co., Inc. v. Boston, 654 A.2d 1272 (D.C.1995); Barker v. Lull Eng'g Co., 20 Cal.3d 413, 143 Cal.Rptr. 225, 573 P.2d 443 (1978).

especially addressing the software problem or generally spoken the information technology problem will be handled later [37] when it comes to the different theories covering this problem in particular. Anyway, the starting points and theories in the US are still based on the basic concepts US courts developed earlier in this field of law: these roots are the same as reflected by the third Rest. of the Law of Torts (Products Liability).[38] The underlying ideas in the US which led to the US approach in particular (e.g the utilitarian or the consumer expectation test) will be also explained later [39] when the analysis covers the comparison and the conclusion referring to the conceptual differences of both liability systems (US and EU).

2. ’Strictness’ and ’Liability’ concepts in the meaning of EU tort law

The European Product Liability Directive of 1985 is not only the first approach to strict product liability, it is also “*supranational*” law that needs to be transferred into national law by the member states to be effective.[40] However, even if the Directive is to be transferred into national law, Art. 249 (former 189) EC Treaty [41] forces each member country to transfer European Union Law in form of Directives as these Directives are released and intended by the Council of the European Union as the only “supranational” authority of the European Union right now to pass law on the supranational level. Thus, Art. 249 (former 189) EC Treaty allows the member countries to choose among the best means to

[37] *See* page 52 f.

[38] *Compare* RESTATEMENT (THIRD) OF TORTS, PRODUCTS LIABILITY § 1-20 (1998).

[39] *See* pages 37-46.

[40] *See supra* pages 1-6.

[41] TREATY ESTABLISHING THE EUROPEAN COMMUNITY, Nov. 10, 1997, O.J. (C 340) 3 (1997) - hereinafter EC TREATY.

transfer Directives into national law referring specifically to transfer it in the most effective and efficient way to accomplish the Directive's goals. This leads to the fact that the analysis' first concern has to be the Product Liability Directive 85/374/EEC itself and then its transfers into national member state law.

a) Directive 85/374/ECC: Official introduction (1985)

The Product Liability Directive contains in the first place the official preamble as the official introduction of the goals and reasons to impose this kind of law. By complying with Art. 249 (former 189) EC Treaty the member countries have to take the preamble into account when they construe and transfer the Directive's provisions into national member state law. In this way the preamble is a fully functioning part of the Directive itself and not only a collateral matter functioning merely as an introduction. To reason the steps to a community-wide Product Liability law the preamble says:

> "*Whereas approximation of the laws of the Member States concerning the liability of the producer for damage caused by the defectiveness of his products is necessary because the existing divergences may distort competition and affect the movement of goods within the common market and entail a differing degree of protection of the consumer against damage caused by a defective product to his health or property; Whereas liability without fault on the part of the producer is the sole means of adequately solving the problem, peculiar to our age of increasing technicality, of a fair apportionment of the risks inherent in modern technological production*"[42] (excerpt).

[42] COUNCIL DIRECTIVE 85/374, PREAMBLE, 1985 O.J. (L 210) 29 f.

This basic starting point of the preamble of the Product Liability Directive is the most decisive statement given by the Council of the European Union. It makes clear that the supranational European product liability is supposed to impose really a "*strict product liability*" without any regard to manufacturing, design or warning defects. By knowing now the starting point we can take a closer look to the single provisions of the Product Liability Directive itself.

b) Directive 85/374/ECC, Art. 1, 6 and 7 (1985)

Product Liability Directive Art. 1 defines abstractly the relationship between producer and liability. Art. 1 states that the addressed producer "*shall be liable for damage caused by a defect in his product*" but Art. 1 itself does not say anything further about the concise standards applicable if defects are concerned. These liability concepts of the EC/EU product liability are covered by Art. 6 and 7 of the Directive.

> Art. 6 EC Directive reads in § 1 that a product is defective when it dies not provide the safety which a person is entitled to expect, taking all circumstances into account, including:
> (a) the presentation of the product;s
> *(b) the use to which it could reasonable be expected that the product would be put;*
> *(c) the time when the product was put into circulation.*

First of all Art. 6 of the EC Directive "facially" points on specific circumstances that are necessary for a liability of the producer: especially the presentation of a product. Referring to the prior analysis of the US product liability [43] this formulation comes close to what

the US product liability tries to assess under "*liability with fault*" - the fault, not to warn or not to instruct the consumer in the required way. Does this mean the EC Directive detours indirectly the fixed strict liability principle given in its preamble? This suggested presumption appears even stronger by looking at Art. 7. The EC Directive gives the producers faced with liability a few ways to exculpate themselves. For the purpose of this analysis we are focussing on only three of 6 provisions, namely Art. 7 (d) to (f).

> Art. 7 EC Directive says herein that the producer shall not be liable as a result of this Directive if he proves:
>
> "*(d) that the defect is due to compliance of the product with mandatory regulations issued by the public authorities; or*
>
> *(e) 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; or*
>
> *(f) in the case of a manufacturer of a component, that the defect is attributable to the design of the product in which the component has been fitted or to the instructions given by the manufacturer of the product.*"

At least the combination of Art. 6 and 7 EC Directive seems to lead to a very curious result: the former stated strict product liability in the preamble of the EC Directive seems to be partially challenged by the following provisions in Art. 6 and 7 because they refer to

[43] *See supra* pages 24-30.

fact patterns that are purely based on fault: to forget to give appropriate instructions, to check not thoroughly enough the compliance with other statutory provisions or to disregard means to discover defects provided by the state of scientific art at that time. Does this mean the EC Directive is then not conceptually focussing on a real strict liability but in contradiction to that much more imposing a disguised product liability based on fault? It is not only the contradiction between Art. 6 and 7 but also the contradiction of Art. 6 itself by taking the connection of liability and "*consumer expectations*" into account. "*Consumer expectations*" in nature of this expression do usually not recognize a fault-based defense as it is brought up the later in Art. 7 EC Directive? Another way of arguing here could also be to say that the EC Product Liability Directive imposes a non-fault strict liability but allows defenses that are in nature only feasible against liability based on fault.

To understand, to solve this problem and to apply this Directive correctly, we have to resort to the EC Council's incentives to establish this kind of Directive. Complying with Art. 95 (former 100a) EC Treaty, EC/EU Directives are the classic means to harmonize the European Economic Communities and vice versa the European Union.[44] Whenever such a measure of harmonization as the EC Product Liability Directive is concerned, it has to be interpreted first as a way to solve market problems within the EC member states. That means clearly, in the first place comes the reason given by the preamble and in the second place the precise transformation of it whereas a former transformation is also needed which is also further combined with language differences that could have an impact on the view of construing the words on a national basis. However, the transforma-

[44] As also reffered to by the PREAMBLE OF THE PRODUCT LIABILITY DIRECTIVE 85/374/EEC, *supra* note 42.

tions will never have the status that the reason for it has and will never have the status of changing and thereby infiltrate the harmonization as the basic underlying idea to pass EC Directives. EC Directives in their nature have to be construed as supranational and not as national law. This conclusion is based not only on the foundation of the EC and EU but also manifested in the EC Treaties, especially expressed by the basic "*EC Treaty*" in Art. 95 (former 100a).[45] Complying with the preamble it means: we have to take it as granted that as the preamble says that "*liability without fault on the part of the producer is the sole means of adequately solving the problem*". Thus, even if we think that provisions show another picture we have to interpret them as a real strict liability. That is amongst others only one factor that makes European supranational law so interesting: it prohibits to stick only with a certain language, with specific expressions or specific terms and without regarding to the whole picture it draws. This is even more an interesting result of European legislature because it is a reflects a clear deviation as to the framework that is imposed and represented today by the underlying Civil Law systems of the European Union.

c) Applicability and national deviations (Art. 15 EC Directive)

Due to the fact that the development of a common sense among the EU member states was hard to reach up to 1985, the EC Council dicided to allow the member states to establish deviations as to the applicability of the EC Directive for so-called "development defects". The voluntary adaption of a strict liability concept for these kinds of defects was written

[45] This assumption is also backed by the EC PRODUCT LIABILITY DIRECTIVE itself in Art. 15, 18, 20 and 21 which are charging the EC Council as well as the EC Commission to observe thoroughly the effects of the Directive on the Common EC market and if necessary to impose changings to avoid unbearable effects through EC liability legislation.

down in Art. 15 EC Directive. Nearly all member states except Luxemburg and Finland excluded a strict liability for “development risks” based on the EC Directive 85/374/EEC.

To exclude development risks does not mean to exclude all construction (design) risks which can be defined beside manufacturing risks. Though, this concept has to be explained due to the fact that otherwise one could easily confuse it with construction risks at all. When the EC Product Liability Directive refers to “development” risks, then it basically refers to construction risks, but only to a part of them. The basic idea behind this concept says that only those defects are excluded that could not - by nobody - be assessed at the time the product came onto the market. This concept was recently (1990/1997) [46] safeguarded by the EC Court of Justice by stating that only if the very highest possible measure line is being applied and the defect was objectively not detectable, then a development risk is given and prevents liability (of course only, if a member state took the opportunity to exclude the liability for that, based in Art. 15 of the EC Product Liability Directive).[47] Thus, vice versa, if a defect in a specific design was actually found, it has to be asked further, if the design defect was objectively detectable at the time the product was marketed. If this latter question can be confirmed, Art. 15 EC Directive imposes undisputedly a strict liability liability for the manufacturer. One can imagine that this standard is so crutial that it is hard to meet for all manufacturers because it is all the time con-

[46] *See* decision of the EC Court of Justice, C-300/95 (05/29/1997 - EC Commission v. United Kingdom of Great Britain and Northern Ireland) (CELEX doc. no. 61995J0300) as well as decision of the EC Court of Justice, C-62/89 (03/20/1990 - EC Commission v. Republic of France) (CELEX doc. no. 61989J0062 - generally to non-tolerable deviations in the context of EC Directives); *see* also German BGHZ VI ZR 158/94 (05/09/1995) = BGHZ NJW 1995, 2162; Cass. l’ere civ., Cts X v. GAN Incendie accidents et al. (No. 1395 P., 07/09/1996); Austrian OGHZ 7 Ob 581/92 (06/30/1992).
[47] *Id*.

nected with high investments in measuring systems that are available to detect possible flaws at that time.

d) National law of the member states (1987-1992)

This interim result is also reflected by all transformations of this EC Product Liability and the official legal commentaries to them.[48] The new EC Product Liability represents a totally different legal approach to the issue of Product and Producer Liability than that approaches which have been established by the member states themselves - namely the former and still simultaneously existing and well-developed liability in the law of torts based on fault.[49]

3. Conceptual differences of both systems

Having now emphasized the very different starting points of both product liability systems as they appear today in the EU and the US, the analysis has to go forward to compare the conceptual differences especially in terms of consequences once the product liability law is applied, starting with the fixed EC Strict Product Liability law.

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[48] *See* e.g. FIRST REPORT OF THE COMMISSION OF THE EUROPEAN COMMUNITIES ON THE APPLICATION OF DIRECTIVE 85/374/EEC ON LIABILITY FOR DEFECTIVE PRODUCTS, Study Contract No. ETD/93/B5-3000/MI/06 (McKenna & Co. Engl. Version of 1993), EC Commission GREENBOOK AS TO THE APPLICATION OF THE DIRECTIVE 85/374/EEC ON LIABILITY FOR DEFECTIVE PRODUCTS (COM 396 final. German Version), 33-36 (1999) and SECOND REPORT OF THE COMMISSION OF THE EUROPEAN COMMUNITIES ON THE APPLICATION OF DIRECTIVE 85/374/EEC ON LIABILITY FOR DEFECTIVE PRODUCTS (COM 893 final. German Version), 5 f. (2000).

[49] Established and adopted even earlier among the member states was the so-called “strict” liability for medical products; *compare* e.g. the German approach in § 84 ARZNEIMITTELGESETZ (8/24/1976; BGBl. I p. 2445) that will be still untouched by the EC Product Liability (Art. 13).

a) The ruling concepts of the EC system (generally)

As we have analyzed [50], the EC product liability system is based purely on a real strict liability regime in order to stabilize and support the common European market in the EC/ EU. That means consequently that only objective standards have to be presented for the prima facie case of the EC Product liability without any regard to a particular fault factor. Likewise, even the producers' defenses against claims in regard to EC Product liability law have to be accepted by the courts only if the defences refer to a standardized and objectively customized standard, not to show a missing negligence in producing a particular product.

Because a strict standard is employed by the EC Product liability, this kind of liability bears many risks for producers. They are bound by totally objective standards that he cannot influence and the risks are focussing on the facts only that (1) the producer manufactured the product in question, (2) that he brought the product into the EC/EU market and (3) that the product itself caused harm for the consumer's health or property. Whenever these three factors are established, the plaintiff has a really good case to win. This assumption is based on the important associated fact that the defences provided by the EC Product Liability Directive are hardly to meet at all: first, the product safety standards are significantly high in the EC/EU member states,[51] second, given instructions and warnings are measured also in compliance with these high standards and are thus eventually a really

[50] *See supra* pages 30-37.

[51] EC Commission SECOND REPORT OF THE COMMISSION OF THE EUROPEAN COMMUNITIES ON THE APPLICATION OF DIRECTIVE 85/374/EEC ON LIABILITY FOR DEFECTIVE PRODUCTS (COM 893 final. German Version), 18-20 (2000 - 01/ 31/2001).

weak defense.[52] Furthermore it is widely accepted among the EC/EU member states that even if the product is in compliance with the high standards set out by the governments of the member states, the product remains still as a subject to EC Product Liability, if the product fails objectively standards imposed factually by the state-of-art of scientific examinations.[53] That means nothing else than that the producer cannot resort to any risk-utility balancing tests as it is/was common under the European negligent law regimes. And when the Directive emphasized "*consumer expectations*" in Art. 6 § 1 as a scope of the assessment of defectiveness, then the EC Directive speaks of what the governments think what is best for the EC market consumer to expect. By mentioning this, it has to be taken into account that almost all regimes in the EC/EU are governed by the Civil Law (as opposed to Common Law) that does not allow juries to decide on these matters. And even Great Britain is no exception since it has abolished the traditional common law jury system at all in civil cases, not only because of the observed abuse of the jury systems (referring to the motives of the legislature) but also because of the massive pressure that the Civil Law systems in the EC are imposing on England's Common Law system.[54] The "consumer expectation scenario" (*supra*) led - as a logic consequence - among other things to the fact that the EC passed also a Product Safety Directive 92/59/EEC in 1992 [55] to establish common standards for these products in ways of supporting the EC market efficiency and by this abolishing all kinds of trade barriers in this regard, that means,

[52] *Id*.

[53] *See supra* note 46.

[54] For the development of the huge restrictions of Jury Trials in the English Common System (beginning since the 1970s), *see* Lloyd-Bostock, *DECLINE OF THE "LITTLE PARLIAMENT": JURIES AND JURY REFORM IN ENGLAND AND WALES*, 62 SPG Law & Contemp. Probs. 7 (1999).

[55] EC COUNCIL DIRECTIVE FOR PRODUCTS SAFETY, L228, p. 24 (08/11/1992); even higher products safety standards are currently proposed by the Commission COM (2000) 139 final./2 (06/15/2000).

taking all safety matters into account that could lead to discrepancies in assessing products' safety standards.

As a conclusion to this liability scenario under the EC Product Liability we can say that a producer "can" actually employ a risk-utility test to some extent, but only to assess his risks in a very small corridor that associates the product by coming into the EC/EU market. Nevertheless, the producer will be rejected in European member courts with a defense based on a risk-utility test outside this small corridor as far as the supranational product liability law is concerned. A reasonable question is consequently: how can a producer then back up these risks if not by refusing to put his product on the market in the first place? The answer is: the liability and thus the damages that can be awarded are limited by the EC Product Liability Directive itself through Art. 9 and Art. 16.

aa) Only material damages

EC Product Liability Directive Art. 9 states plainly that the EC Product Liability Directive is considering only material damages.[56] Material damages are in this context the money necessary (1) to cure the injuries (in case of death maintenance payment etc.), (2) to fix damaged property and (3) to compensate consequential material loss especially in the time the injured person is not able to perform his work as an employee.[57] Indeed, Art. 9 refers also to immaterial damages but merely when it makes clear through this that national provisions that are dealing with immaterial damages under national tort law are not effected in any way and are so still applicable beside the EC Product Liability.[58]

[56] COUNCIL DIRECTIVE 85/374, art. 9, 1985 O.J. (L 210) 29 f.

[57] *Id*.

However, the EC Product Liability Directive does not establish compensation itself for immaterial damages or demands this from a member state in the way of transferring the Directive into national law.[59] Furthermore, no member state has passed additional law because of the EC Product Liability Directive to adopt a deviating approach to immaterial damages.[60] Conclusively, damages under the EC Product liability Directive contain neither pain and suffering nor exemplatory/punitive damages.

bb) Damages limited to "*privately*" used property

Whenever the EC Product Liability refers to property damages, it refers to damages that were sustained (1) at a different item of property than the product itself and (2) at an item of property that was not only intended ordinarily for "*private*" use but also actually used privately in the moment the damage occurred (EC Product Liability Directive Art. 9 (b)).[61]

cc) Threshold for (private) property damage

Art. 9 (b) lays down that a consumer cannot sue a producer individually when only his property is damaged and the amount of damages does not reach 500 Euro which is today about an amount of ca. $500.00 (USD).[62] The member states have construed this provi-

[58] *Id*.

[59] *Id*.

[60] *See supra* note 51.

[61] *See* specific definition in COUNCIL DIRECTIVE 85/374, art. 9, 1985 O.J. (L 210) 29 f.

[62] The EC PRODUCT LIABILITY DIRECTIVE 85/374/EEC itself uses the *ECU* currency unit instead of *Euro* currency unit. Although both concepts are based on totally different bases the official usage of the EC/EU institutions concerning the assessment of the units in that Directive refers to the same amount but in the Euro currency unit (*Cf.* e.g. COM 2000 (893) final, Brussels 1/31/2001).

sion also in a way that even if the costs of property damage pass the line of 500 Euro the consumer has only the right to claim everything that is over 500 Euro in terms of damages.

dd) Overall limitation for damages

Art. 16 of the EC Product Liability limits further the whole amount of damages to 70 Mio. Euro (ca. $70 Mio. (USD) without regards to how many claims are filed, but refers hereby only to the same kind of product and the same kind of defect that caused the liability.[63] This means the liability can indeed exceed 70 Mio. Euro but only if another defect of the product was in charge for caused damages.[64]

ee) Absolute limitation in time in case of liability

The producer is also protected by the law of limitations incorporated in Art. 10 of the EC Product Liability Directive. Art. 10 goes here further than the classic way of the law of limitations because the absolute limitation of 10 years is not starting at the point in time in which the consumer sustained the damage, but starting already at that point in time in which the producer put this specific product the first time into circulation.[65] This limitation is one-sided in favor of the producing industry because this provision can lead to situations in which the consumer would have no protection by this Directive when the producer has already stopped production and circulation of a specific product ten years

[63] COUNCIL DIRECTIVE 85/374, art. 16, 1985 O.J. (L 210) 29 f.

[64] *Id*.

[65] Some groups/parties within the EU are considering to change this in favor of the consumer referring then to the actual date of damage or actual/presumed knowledge about it; *compare* EC Commission, COM (2000) 893 final (issue 3.2.4. (provison of limitations), listed in the German Version on page 23).

before.[66] This would force the consumer to resort to the national law of torts based on negligence.[67]

ff) No retailer liability as a principle

EC Product Liability Directive Art. 3 rules that only the producer himself is addressed by the new EC Product Liability.[68] Exceptions to this principle exist, but Art. 3 directs the liability from the actual producer to the chain of distribution only if the consumer has to face specific factual obstacles. Two obstacles are most important: first, the Directive addresses liability also to an importing company when the manufacturer has his seat [69] outside the EC/EU and is harder to access.[70] Then the European importing company is deemed also as a producer for the purposes of this Directive; the importer is the first part of the chain of distribution within the EC and is responsible for maintaining the business to bring a potential uncertain product into the internal European market; second, the liability shifts also to a distributor/retailer if he presents himself as the manufacturer to the public by labeling the product as if it was produced by himself (e.g. OEMs).[71] Both cases show that the EC Product Liability is looking for a very transparent system - here of

[66] COUNCIL DIRECTIVE 85/374, art. 10, 1985 O.J. (L 210) 29 f.

[67] Which is theoretically also caused directly by the possibility of establishing an exemption for developing risks via Art. 15 of the EC PRODUCT LIABILITY DIRECTIVE; then Art. 10 is not applicable because of the inapplicability of the whole directive.

[68] COUNCIL DIRECTIVE 85/374, art. 3, 1985 O.J. (L 210) 29 f.

[69] This refers also to a Civil Law principle (the seat determination) whereas the Common Law uses generally the administration principle; the seat theory is here much more sufficient insofar it refers to the factual addressing of liability where the incident happened; *compare* STAUDINGER/GROßFELD, INTERNATIONALES GESELLSCHAFTSRECHT 1-20 (13th ed. Berlin Germany 1998); *cf.* HENRY J. STEINER, DETLEV F. VAGTS & HAROLD HONGJU KOH, TRANSNATIONAL LEGAL PROBLEMS 204-25 (4th ed. 1994); *cf.* DETLEV F. VAGTS, TRANSNATIONAL BUSINESS PROBLEMS 113-146 (2d ed. 1998).

[70] *Id*. art. 3.

[71] *Id*. art. 3.; OEM is used as an abbreviation for “Original Equipment Manufacturer”.

course in favor of the consumer - disregarding the particular model of the manufacturer to present, sell or maintain products brought in the EC market.[72] A general approach - beside this just mentioned exception - to include the whole chain of distribution of a product into a joint and several liability concept does the EC Product Liability not know.[73]

b) The ruling concepts of the US system

Whereas the EC products liability system has a catalogue of restrictions does the US system not recognize such ways to confine the liability - at least not generally:[74] the US concept of products liability allows (even under a strict liability concept) to claim “pain and suffering” in order to be awarded with a specific/just amount of money as a means of relief.[75] So far as the US product liability regime is based on fault even exemplary/punitive damages can be granted.[76] Likewise does the US concept not refer to privately used property only [77], it does not establish a restriction as to a lower threshold [78] or even restrict the liability to a maximum amount for damages for one product [79]. Moreover, the US concept includes the complete chain of distribution into the products liability scenario insofar as the particular links of are acting in course of their business.[80] Only one issue is restricted by the US regime that has no counterpart in the EC/EU regime which is the restriction of the US product liability (generally) as to mass products only.[81] This

[72] PALANDT/THOMAS, PRODUKTHAFTUNGSGESETZ, EINFÜHRUNG (60th ed. Munich Germany 2001).

[73] *See* COUNCIL DIRECTIVE 85/374, art. 3, 1985 O.J. (L 210) 29 f.

[74] FOWLER V. HARPER, FLEMMING JAMES JR. & OSCAR S. GRAY, THE LAW OF TORTS, Vol. 5, p. 549-55 (2d ed. 1986).

[75] *Cf*. *supra* page 40.

[76] *Id*.

[77] *Compare* RESTATEMENT (THIRD) OF TORTS, PRODUCTS LIABILITY § 1 (1998).

[78] *Id*. *supra* page 42.

[79] *Id*.

[80] *Cf*. *supra* page 43.

concept could be found also in the first drafts of the EC Product Liability Directive but was later crossed out when the final Directive was passed and promulgated by the EC Council in 1985.[82]

As a further interim result of this analysis, the thesis can hold to the fact that both systems are separated not only in the roots (strict or fault based liability) but also - as a result of these partially different roots - separated in the conceptual design of the consequences and remedies that arise from the different regimes. In compliance with this result, the EU regime nowadays works with a very strict liability standard whereas the US products liability regime employs still - except for defects based on the manufacturing process only - fault based principles, that means, in the majority of US decisions/states the "risk-utility test" [83] and in the minority of US decisions/states the "consumer expectation test" is applied [84]. Even if these last mentioned US approaches have both advantages and disadvantages for either sides (plaintiff and defendant) they still remain to be based basically on fault principles. The next step is now to find out the following: what consequences does this have for the confinement, of what a "*product*" can be under both tort regimes and how is it then possible to incorporate product liability scenarios for "*software*" or generally spoken for "*information*" as potential products?

[81] *See* the approach to services in general in DAN B. DOBBS, THE LAW OF TORTS § 376, 1041 (1st ed. 2000); but *compare further* the approach to so-called "*hybrid transactions*" where the dominancy of the tangible product should decide about the applicability of product liability theories: Hill v. Rieth-Riley Constr, Co., Inc., 670 N.E.2d 940 (Ind.App.1996).

[82] *Compare* Proposal of the EC Product Liability Directive of 1979 (COUNCIL DIRECTIVE PROPOSAL, art. 2, 1979 O.J. (C 271) 3 (4/right column)) with Art. 2 of the finally released Product Liability Directive of 1985 (COUNCIL DIRECTIVE 85/374, art. 2, 1985 O.J. (L 210) 29 f.).

[83] *See* DAN B. DOBBS, THE LAW OF TORTS § 357, 985-96 (1st ed. 2000).

[84] *See id*. at § 356, p. 981-85.

II. Definition/Confinement of 'Products' in US and EU Tort law

1. The US tort law

a) ALI Torts Rest. (second), Torts § 402 (1965)

The Rest. (second) of the law of Torts § 402 (1965) does not define the qualities of a "product".[85] In the promulgated comments and illustrations the authors resorted to a vague, negative formulated, description. According to the comments, "products" are not only products intended to be dedicated to the "*intimate bodily use*" or to the "*human consumption*".[86] However, the illustrations show that the basis for the restatement of 1965 were only tangible products.[87] Neither is this an indication for the exclusion of intangible products [88], nor is it surprising that intangible products at all are not mentioned: nobody thought at that time of e.g. software as a separate product. First-generation-computers of that time could not be separated technically from the software by which they were driven. Even ten years later (mid-1970s), we had the same effect by observing a so-called computer soft- and hardware bundling [89] for tax and accounting issues which serves here as a suitable reflection of the way people and courts thought about software in general in the 1970s.

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[85] RESTATEMENT (SECOND) OF TORTS § 402A (1965).

[86] *See* RESTATEMENT (SECOND) OF TORTS § 402A (1965) (illustrations).

[87] *See* RESTATEMENT (SECOND) OF TORTS § 402A (1965) (comments).

[88] *See supra* 17-24.

[89] PRACHNER, ANSATZ, AUSWEIS UND BEWERTUNG VON IMMATERIELLEN WIRTSCHAFTSGÜTERN UNTER BERÜCKSICHTIGUNG VON COMPUTERSOFTWARE 109, 114 (Diss. Vienna Austria 1990).

b) ALI Torts third Rest. (Products Liability) § 19 (1998)

This situation changed after the ALI promulgated the third Restatement of the law of torts in 1998. Courts recognized the different quality of soft- and hardware by considering both separately.[90] § 19 of the Restatement is a mirror picture of that development. In § 19 (a) the Restatement gives first a general definition of products by stating that

> "*a product is tangible personal property distributed commercially for use or consumption. Other items, such as real property and electricity, are products when the context of their distribution and use is sufficiently analogous to the distribution and use of tangible personal property that it is appropriate to apply the rules stated in this Restatement*"[91].

The last description asks obviously for the purposes of this analysis whether we could formulate eventually a close relationship between "*software*" and "*electricity*". However, neither "*software*" nor "*information*" as imaginable products under this regime are mentioned which means that the US Common Law has not adopted a firm product liability regime that accepts also intangible items as products - at least not generally.

c) Developments 1998 - today (Case Law)

The current situation of the US Common Law, that means from 1998 to 2001, does not differ significantly from the situation prior to the third Restatement of torts grounded by the ALI in 1997.[92] The US Common law Courts are nowadays still focussing on tangi-

[90] *Compare* Randy Rice et al. v. United Parcel Service General Services Co., 43 F.Supp.2d 1134 (D. Or. 1999) and HOU-TEX, Inc. v. LANDMARK GRAPHICS, 26 S.W.3d 103, 107 n. 2 (Tex. Ct. App. 2000).

[91] RESTATEMENT (THIRD) OF TORTS, PRODUCTS LIABILITY § 19 (1998).

ble products in terms of (strict) products liability issues, but they are generally open only to accept "electricity" (as a product) which is mentioned explicitly in § 19 of the third Restatement of the law of torts (Products Liability).[93]

2. The EU tort law

a) Directive 85/374/ECC, Art. 2 (1985)

The EC Product Liability Directive tries to describe in Art. 2 both precisely and broadly which qualities a "*product*" needs to have to be subject of the EC Product Liability; precisely because the Directive mentions all major items by stating

> in Art. 2
> "*For the purpose of this Directive 'product' means all movables, with the exception of primary agricultural products and game, even though incorporated into another movable or into an immovable. 'Primary agricultural products' means the products of the soil, of stock farming and fisheries, excluding products which have undergone initial processing. 'Product' includes electricity*"[94]

but contrary to that Art. 2 does not define further - and that is the broad part - what "*movables*" are (pure movables or movables that also cover necessarily and the inherently immovables contents?)

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[92] *See id*. note 90.

[93] RESTATEMENT (THIRD) OF TORTS, PRODUCTS LIABILITY § 19 (1998).

[94] COUNCIL DIRECTIVE 85/374, art. 2, 1985 O.J. (L 210) 29 f.

b) Transfer of 85/374/EEC into binding law

As mentioned earlier [95], the Directive does not establish the EC Product Liability itself. To be binding for the manufacturers, it needs to be transferred into national law. Once transferred into national law by a particular member state, the EC Product Liability is national member state law abstractly, independent from the other states' law.[96] This effect takes place directly by passing national law without any regard to the behavior of any other member state.[97] Partially by violating the 3 year deadline imposed by Art. 19 Product Liability Directive to pass the new EC liability law, finally all 15 member states transferred the Directive into national law more or less accurately.[98]

c) National law of the member states (1987-1992)

The transfer into national was insofar problematic as it was left to the member states to rule on the issue how to define 'movables'. Here, the so-called (prolonged) subsidiary principle came into play which stands for an EC Doctrine that demands from the EC institutions to use the smallest ruling influence and the smallest affecting means possible to achieve a community goal.[99] This concept is insofar safeguarded by the ability of the EC Court of Justice to rule on this issue, if the member states do not find a common approach to these issues of interpretation.[100] At all, the member states used their familiar term to describe movables: e.g. France employed its legal term *"chose"*, Germany

[95] *See supra* pages 1-6.

[96] *See* EC TREATY, art. 249 (former art. 189) O.J. (C 340) 3 (1997).

[97] Id.

[98] *See* COUNCIL DIRECTIVE 85/374, art. 19, 1985 O.J. (L 210) 29 f.

[99] *See* EC TREATY, art. 95 (former art. 100a) O.J. (C 340) 3 (1997).

[100] *See supra* note 46.

"*Sache*" and the English Consumer Protection Act 1987 remains with the term stated in then English version of the EC Directive "*movables*".[101] However, the problems of the appropriate translation appears even earlier because there is no "*one*" ruling version of the Directive. Every member state has its own (language) version of the Directive so that the explanations given by the EC Council, the EC Commission, the EC Parliament and the EC Court of Justice are much more decisive and helpful than the specific language in a specific final language version, even if the language is the widely understandable English language.[102]

Eventually each member state still uses today for the interpretation (and had used at that time for the transfer of the Directive) its own legal expression to describe the term "*movables*" in the most appropriate way. Here, the self-developed expression of before was borrowed from the context of tort law and contract law regarding to the most closely related national areas of law that fit to the EC Product Liability.[103] Beside that, just the provided definition of Art. 2 can be taken to describe everything around the term "*product*". This means that no member state has today really a different starting point to cover

[101] *See* COUNCIL DIRECTIVE 85/374, art. 2, 1985 O.J. (L 210) 29 f. (*see* there different language versions); transformations in France and Germany entered into force in France through Law No. 389-98 du 19.5.1998 by 23.5.1998 and in Germany through Law of 15.12.1989 by 1.1.1990.

[102] Id.

[103] *See supra* 6-24; this scenario is insofar complying with the major EC TREATY as Art. 95 (former 100a) allows the member states by transferring the supranational EC law into national state law to use the best means to do that without changing the intention and the effectiveness of it to guarantee a harmonized application of EC law. Even as Austria referred in the language of its national law particularly to a specific definition in its Civil Code, no other member state was concerned about that. But still, the expression in the Directive is supranational law and has to be construed differently if the common situation in the EC demands that. If the term is then in question, in case of Austria, Austria has to make clear that there is a discrepancy in concepts between the supranational and the national term (based on Art. 95 (former 100a) EC TREATY).

immaterial goods, as "*information*" and "*software*". These issues are left to the interpretations of the national law and have to be reviewed under the EC market aspects.

Unfortunately, no EC institution has clearly stated yet, how to construe the term "*product*" when it comes to immaterial goods. Accordingly, the analysis has to resort to pure national law dealing with this problem.

Chapter

D. Combining legal and technical issues

The thesis has shown so far that both legal systems the US Common Law and the new European Product Liability do not show facially and in general [104] any way to cover tortious problems that could occur in the context of defective software or wrong information published in books or elsewhere. Anyway, this does not mean at all that single courts and the literature to legal affairs have not detected the problem which software triggers under these tort law regimes. To get an overview of the different starting points and theories that refer to (strict) product liability for "software" and "information", the following part (1) will display all theories to this subject, (2) will compare them among each other, (3) will discuss their specific value for solving up-coming problems with the software product liability and (3) will discuss their single meaning for both tort law regimes especially in comparison with the conceptual differences that both systems represent today.

[104] As to the US Common Law referring to general principles restated in the ALI Restatements of the law of Torts (second and third) and as to the EC Product Liability referring to missing provisions in the EC DIRECTIVE 85/374/EEC.

I. Theories to address technical issues under Tort law

1. Software embodiment (Wide/Narrow) [105]

Both product liability systems are focussing basically on a "*tangible product*" as the center point of (strict) product liability. As the name already indicates, the theory of "*embodiment*" is based on the close connection between "*software/information*" and the "*object*" that contains the software or information:

> *Software cannot exist without a data medium. A data medium which contains software, saves the software 'corporeal' and therefore forms corporeal boundaries of the software. The loss of the corporeal qualities of the data medium is simultaneously the loss of the corporeal boundaries of the contained software. This dependency of software on the corporeal qualities of the specific data medium let both parts appear as only one uniform 'object'.*

The further sub-distinction between a "*wide*" and a "*narrow*" embodiment derives out of the fact that both regimes recognize electricity as a product. Likewise the theory of wide embodiment extends the "*object*"-quality to media that contains software/information with the support of the *electric current*-argument whereas the theory of narrow embodiment refuses to accept this extension and remains logically with the classic *tangible objects* only.

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[105] *Compare* also early overview given 1986 by Gary T. Walker, *THE EXPANDING APPLICABILITY OF STRICT LIABILITY PRINCIPLES: HOW IS A "PRODUCT" DEFINED?*, 22 TORT & INS. L.J. 1, 2 (1986) (et. al. with reference to Wunsch, *THE DEFINITION OF A PRODUCT FOR PURPOSES OF SECTION 402A*, Ins. Counsel J. 344 (1983)); *compare further* overview given 1998 by Daniel T. Perlmann, *WHO PAYS THE PRICE OF COMPUTER SOFTWARE FAILURE?*, 24 Rutgers Computer & Tech. L.J. 383 (1998).

2. Mass-production [106]

The theory of mass production tries to assess the value of the mass-production factor for (strict) product liability regimes where it states that:

> *Software and Information can only be considered as products in the framework of (strict) product liability regimes if they are put into the markets for the purpose to reach a considerable amount of people. If they appear so, then it seems reasonable in the ways of analogy to cover this so appearing software/information also as products. Otherwise they have to be treated as a result of individual services which are excluded by (strict) product liability regimes because of different situations in which the risk is treated and distributed differently which guides then to a totally different legal situation.*

3. Risk-limitation [107]

The theory of risk limitation is looking at the whole situation a manufacturer is facing when he puts and markets a product in terms of risk distribution and re-covering of distribution risks by appropriate insurances or by forming appropriate reserves:

> *In typical product liability regimes manufacturers have the advantage to rely on an internal product-risk calculation that allows them to balance out the potential risks of their products with charging higher prices from the consumer. In this way manufacturers are then able to frame money reserves or are able to buy product insurances with potential insurers for cases in which the product triggers harm to the consumer himself*

[106] *Compare* overview *supra* note 105.

[107] *Compare* overview *supra* note 105.

or to his property. The potential risk calculation in case of the use of pure information or software has then to be rejected or limited to a certain calculable extent insofar the interpretation of information as well as the way software can be used has so many varieties that it is inassessible for manufacturers/producers to find a reasonable way to back up their risks. This can either be due to the refusal of insurers to insure these risks or due to an infeasible way to market the product because of its otherwise totally overpriced value.

4. Software effects [108]

The theory of software effects considers, how software affects its environment:

To be a 'thing' software must have corporeal qualities. Therefore software can only be a thing if software is physically perceptible and if software influences its environment such as physical objects do. Thus software is commonly said a thing if any physical effect is measurable outside the computer or outside the processing unit when the software is running. If so software behaves like a 'thing' so that the legal consequence can only be to draw the same decision as the law does in case of physical objects.

5. Abstract goods [109]

The theory of abstract goods goes much further than the theory of wide embodiment (dares to go) by taking factors into account that refer especially the situation that the consumer is urged to face in case of harm which was triggered by "*defective software*" or "*defective information*":

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[108] *Compare* overview *supra* note 105.

[109] *Compare* overview *supra* note 105.

The new appearance of software has to be considered under (strict) product liability regimes because the only decisive factor of a product liability is the consumer protection, not the legal protection of the producer as to liability risks. On this basis (strict) product liability has much more to focus on the way the product enters the consumer markets. Are they similar for the marketing of software to the marketing of classic (tangible) goods, then they are automatically subject to (strict) product liability. And even if software is carried by tangible objects, these objects are collateral and not the main concern of the buyer. There for the term product has to be replaced or at least interpreted in the way goods are concerned. Accordingly software and at least printed information should be accepted as goods and thus "products"; both reach the consumer not as pure non-material information but accompanied by a material container without these goods could not exist. Hereby the consumer would not understand why to distinguish software or information from other mechanical tool that broke because it contained a defect triggered by a lack of information that influenced negatively the developments or the manufacturing of the product.

6. Separate immaterial goods [110]

The theory of immaterial goods concentrates just on the creative contents of information and software:

Software is an accumulation of commands arranged in a specific way to let specific computer reactions happen. The special arrangement of software commands is the result of programmers' ideas. Thus the worth of software for a customer or the community does not base on something corporeal, the worth bases only on the intellectual performance of the individual programmer. He gives the software its contents such as a

[110] *Compare* overview *supra* note 105.

writer does by writing a book. Therefore software is every time an incorporeal immaterial good, not an'object'.

II. Weaknesses of these theories in case of software

We have seen *supra* that the theory of embodiment and the theory of effects applies only under specific circumstances, the theory of immaterial goods in no situation to the legal quality of software as 'tangible' product. Is there really a point in using these limitations?

1. Software embodiment (Wide/narrow)

Software does not need a specific data medium to exist. Computer programs can be easily transferred to other data mediums without influencing each of both the software and the data medium: neither will they be physically destroyed nor changed in any way which includes at all no change in their function as software or data medium.

The same applies to defects: if software and the data medium were attached 'corporeally', all defects in the software would be defects of the data medium (and reverse). This result does not make sense, if one considers that both are usually and every time separable from each other (part) without creating any loss.

The theory of software embodiment fails again in case of micro-electronic data media: there is no physical object such as a physical-magnetic piece or layer of metal which changes its physical condition as in floppy disks or in hard disks. Rather more, electrons are changing their energy conditions in micro-electronic data media. Applying the theory of software embodiment, these mentioned facts would have the following confusing

result: if the software is running within the (random access) memory of the computer, the software would be ’incorporeal’; if the software is not running that means that the software is resting on the hard disk the software would be ’corporeal’: thus, a split-second would decide whether software is ’a thing/an object’ or not. This is totally confusing, especially because each process of running and using software includes an inalienable copy process of the software from wherever into the (random access) memory. Accordingly, this would strongly mean that no running software can be a thing/an object referring to the theory of embodiment. Additionally every software can be re-transferred from a non-physical data medium to a physical one without any loss in data. These facts show that a distinction based on the terminology ’corporeal’ / ’incorporeal’ cannot work in case of software. But this is the main statement of the theory of software embodiment.

2. Mass-production

The theory of mass-production arguments mainly through the fact that the mass-production is the typical way to diversify the risks for the manufacturer by spreading liability risks by calculating those and raising accordingly the price of the product to a certain extent. As a consequence, the theory of mass-production comes to the conclusion that the shifting from standard to individual products is deemed to be a change from ’products’ to ’services’. However we try to determine this relationship, we have to struggle with the problem that the risks for the consumer do not differ at all. Even the ’individually produced object’ which comes out of an ordered service provides all risks that standard products have. Moreover, the fact that the person ordering the ’individually produced object’ might also take a share of responsibility because of the specifications (communicated

beforehand), the ’individually produced object’ is even more risky and unpredictable than a standard product usually is. With this situation confronted, a third person that the tort law is also taking into account would be left with these risks for which he was not in charge and maybe suffers damages resulted out of the confrontation (by the individually produced object). When we would follow this theory completely in terms of (strict) product liability, then we would give manufacturers of individual products an incentive behave be less thoroughly than they could in favor of the consumer - especially as to third persons and innocent bystanders.

Even if we do not agree with enhancing the (strict) product liability to individual products because of the general argument against it (impossible risk spreading), we still have to consider that we have a total different situation with software; in case of software system to divide into a standard and individual software nowadays is led nearly ad absurdum. The reason lies in the way software programmers are structuring and programming their software: a modern software architecture, that means objective programming [111], requires to think in modules and perform in modules. Not only modern programming languages, but also the way to find a reasonable way to market software led to the fact that we nowadays basically only find programs that consists of modules that we can - at most - circumscribe as a conglumerate of standardized-individual software modules. These standardized individual modules are in contrary to real individual software designed to fit to a wide

[111] Based accordingly on the different modules/structures available under the most current and most advanced computer programming languages as e.g. C+, C++, C-Objective and other objective-structure-related programming languages (PAP, Java etc.) to provide not only accessable overviews over the complexity that current software has to deal with, but also to provide easier ways to define internal and standardized interfaces (beginning with hardware/firmware suppliers).

range of demands of customers with only little really individual adjustments in it. Nevertheless, even if they appear facially to be real individual software, this software is only on the surface individualized, but remains still as a standard software. Finally, this whole starting point and approach to (strict) product liability for software has to fail due to the software-programming architechture. The fundament of the mass-production theory; it lacks to consider the facts of modern software concepts that do not allow such a distinction.

3. Risk-limitation

A limited risk in case of a liability for software products is given only if the manufacturer knows all specific circumstances under which the software has to opperate; these confiments are crutial - especially in terms of software risk assessments; the manufacturer can usually not assess the risks of his software due to a lack of information about the environment in which the consumer uses/will use the software. This principle knows only one exception: individual software. Hereby, the manufacturer can much better confine the risks by knowing the precise environmental situation in which the individual (technical) problems have to be solved by the customized software. However, this starting point has to be disregarded; the manufacturer would have been granted an advantage that is not justified by the technical background in which individual software nowadays is modernly programmed.[112] The same principle can be employed that also disqualified the Mass-production theory, even if here the perspective is a different one.

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[112] *See supra* pages 54-54 (So-called real individual software is totally rare and can therefore be disregarded for consumer purposes within the liability under the Strict Products Liability Regimes we are dealing with here).

4. Software effects

There is no software imagible that has really no effect on its environment. Every operating software, each even (operating) software command produces impulses of electricity inside the computer. To find a result by a distinction based on findings if effects take place inside or outside of the computer must fail, because it can only be a random result and is therefore unreasonable: to trace the exact location of an electrical impulse within a computer system is nearly impossible.

5. Abstract goods

The Abstract goods theory tries to get into the way in which the consumer is reached by the products - here by software. This theory has a wide approach but maybe goes too far because a (strict) products liability regime in torts, especially if some kind of "*strict*" elements are involved, require to be constantly close to specific standardized situations in which some elements appear that consider sources of danger that are 'typically dangerous' and 'hard to cover technically'. Anyway, this theory is one that gives a solution/formula (in terms of consequences) that is easiy to apply, but a better approach would argue over the technical issues of software: to be able to argue that the typical situations that are often approached by strict elements of liability also for software exist and that it is reasonable to argue in favor of a transfer of these principles to software products at all.

6. Separate immaterial goods

The theory of immaterial goods avoids to treat the real underlying problem; this theory does not ask if software has in fact 'corporeal' qualities and it does not ask also if immte-

rial goods by themselves cannot be ’corporeal’ things in the meaning of a “tangible product” term as it is used in the framework of (strict) product liability regimes. Additionally, ideas are contained in every ’object’ that exists. Without these ideas - the information of construction - no object would exist. Of course, most legal systems give the manufacturer an effective way to protect his ideas containing in a manufactured object by granting/ assigning intellectual property rights; but the meaning of these ways to protect the object’s immaterial worth may not be mistaken in the context of qualifying software as a (tangible) ’product’. Both fields of law consider a completely different aspect of law. The requirements and effects of the immaterial property law are oriented differently and eventually not comparable. Even if every immaterial good by itself could be viewed as a tangible “*object*” because of its surrounding material container, the consequences of either area of law would still arise; and no conflict would occur because of the consequences that are triggered by the intellectual property law would not regard the support in tort law which helps the consumer. Intellectual property law does not grant any rights to the consumer beside a restricted use of non-owned information as e.g. by the established fair use principle in the US. But still, the intentions of either regimes are different so that there is no doubt that both areas of law apply simultaniously and indipendently from the interpretation of a specific terminology that is used by the US or the EU (strict) product liability regimes. The only instance that can occur is that we will get finally a clear statement whether risks arising from dangerous and performed ideas can be captured by the (strict) product liablity law; this would probably arise to one of the major questions in the future by recognising the issue that the meaning of information technology is challenging today traditional legal principles and will be getting a much bigger issue in the future. Having

this in mind, the theory of immaterial goods refuses to implement a (strict) product liability regime without arguing about the risks that can develop out of a incidental use of information so that the conclusion is based only on the one idea, that is, to reduce information liability issues at all to further the marketing process of information instead of showing any responding responsibility.

7. Conclusionary statement

No theory displayed should be accepted: Each of these theories has undetected problems or is failing because of technological facts. Up to now no theory is capable to explain reasonably and consistently why e.g. software saved contemporarily on micro-electronic chips can or cannot be a ’product’, especially by considering that there is no different quality recognizable between pure (former used) mechanical devices and software (nowadays) that works as the intelligence of the devices as a part of it. Most of the theories that have been developed under (strict) product liablity regimes as to the computer software issue disregard technical problems that are inherent basically by refusing to further explore them, sometimes even by refusing to address them at all.

Chapter

E. Importance of these theories in US and EU Tort law

The just finished analysis of all the theories that exist today to explain the issues that appear as the first step of including or excluding software under product liability regimes does not tell us specifically whether all of them or only some of them are also applicable under the (strict) product liability regimes that are used in the US or in the EU. Thus, the next step is to display separately in which of these both jurisdiction-areas these theories appear and specifically if both jurisdiction-areas maybe disregard one or the other of the theories. However, insofar the analysis was up to now presenting the related issues of tort law in general and further the theories that show evitable ways to handle this problem, the analysis is now considering the application of these theories and doctrines, supported by closely-related case law, transferably-related case law or plainly by opinions in the literature that address this issue.

I. Applicable theories under US Tort law (Software as a product)

1. Case Law (software)

Only a few US courts really addressed the question whether the Common Law considers software as a "*product*" under a tort product liability theory.[113] The reason is quite clear when we take the given examples in the introduction [114] into account where courts are able to rely on the fact that especially highly technical machines like MRTs and CRTs are

[113] *See* the following cases of the analysis, pages 64-82.

[114] *See supra* pages 1-6.

sold together with the software that controls them; courts can resort to these machines as "one item" and deem them as products because of their tangible components: both are manufactured by one manufacturer and by one contractual partner; this way, of course, disregards, that other situations cannot be captured in which the abilities and complexities of software force the strong relationship between hard- and software producer to separate. At least a hook to predict a later decision-making in these kinds of up-coming cases and situations is shown by those decisions of US Common Law courts that focussed on the general information liability, e.g. for geographical charts, how-to books and elsewhere provided and accessible information) [115]. Unfortunately, but because of the highly sensitive issue, courts were inconsistant among themselves how to approach it, basically refering to constitutional concerns by bearing in mind to have possibly unneccessary and unconstitutional restrictions of the "Free Speech Principle" guaranteed by the First Amendment of the US Constitution.[116]

a) The theory of Mass-production

aa) Saloomey v. Jeppesen & Co. (1983) [117]

In this case the 2nd Circuit Court ruled 1983 by an affirmation of the trial court's earlier decision [118] that mass-produced information contained in navigational charts are "products" in the meaning of strict product liability purposes.[119] It stated clearly:

[115] Saloomey v. Jeppesen & Co., 707 F.2d 671 (2d Cir. 1983); Winter v. G.P. Putnam's Sons, 938 F.2d 1033 (9th Cir. 1991); SDK Medical Computer Services Corp. v. Professional Operating Management Group, 354 N.E.2d 852 (Mass. 1976).

[116] *Id.*

[117] Saloomey v. Jeppesen & Co., 707 F.2d 671 (2d Cir. 1983).

[118] Halstead v. U.S., 535 F.Supp. 782 (D. Conn. 1982).

[119] *Id.* at 676.

> "Applellant's position that its navigational charts provide no more than a service ignores the mass-production aspect of the charts. Though a 'product' may not include mere provision of architectual design plans or any similar form of data supplied under individually-tailored service arrangements, ..., the mass production and marketing of these charts requires Jeppesen to bear the costs of accidents that are proximately caused by defects in the charts."[120]

Very obvious is here that the court of appeals is using (obviously) §402A (Rest. (second) Law of Torts, 1965) as a basis for this decision and the line of decision-making is very straight at the line which the general theory of mass-production [121] goes. Typcially are the distinction between standard and individual products as well as the hint to the loss-spreading mechanisms that the standardized mass production allows among the customers. However, still we have to look at Saloomey v. Jeppesen & Co. with bearing in mind, that defective information in navigational charts are used as tools. We then are also allowed to draw very carefully the line in the consideration of the theory of software-effects, where especially effects on the user/consumer are concerned; the user/consumer goes through the process of innovation and can observe hereby that former mechanical tools are replaced more and more by software (information) tools.[122]

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[120] *Id.* at 677.

[121] *Cf. supra* page 54.

[122] This approach favors the mass-production argument in terms of strict prodcut liability which is one of the bases of the general theory of mass-production (*supra* page 54); also considered by the official comments to § 402A Rest. (second) of the law of torts.

bb) Brocklesby v. United States (1985) [123]

In this decision the 9th Circuit Court steped 1985 into its earlier argumentation in Aetna Casualty of 1981 [124] and took the according decision of the 2nd. Circuit Court in Saloomey of 1983 [125] to reason that “aeronautical charts” are “products” under California law as they were held ealier under Nevada law (Aetna) and Colorado law (Saloomey). Specifically it said that aeronautical charts are “defective products for purposes of analyzing under section 402A”.[126] Even here, the 9th Circuit Court left open its own fundamental reasoning for its confirming approach; the court took and adopted much more solely the ideas of §402A [127]. However a very interesting incidence happened between the first and the second (superseding) decision in Brocklesby: Whereas the 9th Court of Appeals in the first decision cited Saloomey [128] to distinguish it from Walter v. Bauer [129] (a New Yorker case of 1981 where the court denied to apply product liability law to the content of a book) by saying that the intention of the content of the published material makes the difference in handling it as a matter of product liability law, did the 9th Court of Appeals in the second - superseding - decision left out that passage by referring to the fact that it was not necessary to approach that problem as a procedural matter.[130] However, even if we cannot use this decision as a negative signal for applying (strict) product liability law to published materials, it seems that the court itself was not really convinced by its

[123] Brocklesby v. United States 753 F.2d 794 (9th Cir. 1985) (First decision of the 9th Circuit), Brocklesby v. United States 767 F.2d 1288 (9th Cir. 1985) (Second superseding decision).

[124] Aetna Casualty and Surety Co. v. Jeppesen & Co., 642 F.2d 339, 342-43 (9th Cir. 1981).

[125] *See supra* note 91, at 676-77.

[126] *See supra* note 97, at 800 and at 1295.

[127] RESTATEMENT (SECOND) OF TORTS (1965).

[128] *Id* at 800 n. 9.

[129] Walter v. Bauer, 439 N.Y.S.2d 821, 822 (N.Y.Sup. 1981).

[130] *See supra* note 123, at 1295 n. 9.

made distinction between books and aeronautical charts; this assumption seems to be oppressive insofar as the court could have left the made distinction in the second decision - at least as a persuasive obiter dicta argument, but it did not; it prefered much more to strike it out completely.

cc) Fluor Corp. v. Jeppesen & Co. (1985) [131]

This case of 1985 again considered Jeppesen's aeronautical charts under the product liability law, this time under California law but in a state Court of Appeals. This makes it different from Saloomey [132] which was decided by the federal Court of Appeals (9th Circuit). Even if Saloomey was due to this fact no binding precendent for the California state Court, the California Court of Appeal (2nd District) decided in the line of Saloomey: Jeppesen's aeronautical charts have to be considered as "products" under California law.[133] Furthermore, this time the California court went a step foreward in the reasoning and delivered significant grounds by combining statements of general products liability authorities with the geographical chart issue:

> "We also share the belief ... (citation omited) ... 'that the policy reasons underlying the strict products liability concept should be considered in determining whether something is a product within the meaning of its use ... rather than ... to focus on the discretionary definition of the word'. When so viewed, characterizing respondent's instrument approach chart as 'products' serves the 'paramount policy to be promoted by the doctrine', i.e., 'the protection of otherwise defenseless victims of manufacturing

[131] Fluor Corp. v. Jeppesen & Co., 216 Cal. Rptr. 68 (Cal. Ct. App. 1985).

[132] *See supra* note 117.

[133] *See supra* note 131, at 70.

defects and the spreading throughout society of the cost of compensating them.' (citations omitted)".[134]

This clear statement in favor of considering these specific "aeronautical charts" as "products" under (strict) product liability regimes is insofar surprising as the California Court of Appeal tries here obviously to encounter the concerns (indirectly expressed by the omission of this discussion under constitutional aspects [135]) of Brocklesby [136] which was also decided under California law by the 9th Circut Court shortly before. It encountered this approach also through mentioning Jeppesen's loss-spreading possibilities by an estimated production and distribution of about 8000-9000 charts world-wide and about 5000 in the US which are describing ca. 2500 airports in the United States - 'available to all users of the air space without limitation on their distribution or sale'.[137]

b) The theory of Abstract goods

aa) Aetna Casualty and Surety Co. v. Jeppesen & Co. (1978/1981) [138]

This case developed in a Federal District Court of the District of Nevada on an indemnity issue under California law [139] and came as a result of that to the Court of Appleals of the 9th Circuit where the granted indemnity was reversed and the case remanded - especially by deceting problems with the problem to assess the negligence issues appropriate. Beside this problem, both courts found 1978/1981 correspondingly that aeronautical

[134] *See supra* note 131, at 71.

[135] *See supra* pages 67-68.

[136] *See supra* note 131, at 70.

[137] *See supra* note 131, at 70 n. 1.

[138] *Id. supra* note 124, at 339 (2nd Instance).

[139] *Cf.* Aetna Casualty and Surety Co. v. Jeppesen & Co., 463 F.Supp. 94, (D.Nev. 1978) (First Instance).

charts can be “products” at least under California law. More explicitly the Court of Appeals pointed out that

> “Jeppesen acquires this FAA form and portrays the information therein on a graphic approach chart. This is Jeppesens ’product’. ... The defect, if any, is in the graphic presentation of that information.”[140]

By doing this, the Court of Appeals did not look at the charts as tangible products. Much more it foccussed on the abstract information and the presentation of the information. When the Court said that each chart “conveys information in two ways: by words and numbers, and by graphics” [141], it did not consider the paper as a container for that information; it never mentioned the tangible part - the paper - itself but assumed it as a collateral and necessary means of transportation;[142] it ever tried to approach the information directly and never through the tangible paper part. Thus, these decisions can be taken as examples where courts tried to approach information liability in an abstract way. Would the aeronautic information at that time have been contained in a software, both courts probably had found that even software is a product as the part which really is the information and had disregarded the container (e.g. the harddisk, disk etc.) of the information/software. In this way the courts argue in the line the theory of abstract goods [143] is arguing, even if the courts themselves left out an explicit discussion of how to get to this result.

[140] *Id.* 342.

[141] *Id.*

[142] This is also the reason why the Aetna case cannot be taken as a Court decision that stands as an example for the embodiment theory, *see supra* (page 53).

[143] *See supra* page 55.

bb) Randy Rice et al. v. United Parcel Service General Services Co. (1999) [144]

One of the most recent cases is certainly Rice v. UPS General Services Co decided in 1999. The basic concern of this case was a handheld computer combined with a specific software that caused stress symptoms to the drivers that were employed by UPS. Software and Hardware were developed and delivered by the General Services Co. (also UPS) branch to the parant Company UPS which used the handheld computers to support the efficiency of conveyance.

The Federal District Court (Oregon) decided under Alabama and Wisconsin products liability law (explicitly under Alabama law the Alabama Extended Manufacturer's liability doctrine, short: AEMLD [145], and under Wisconsin law that - by case law - adopted the Rest. (second) §402 approach [146]) that the main issue of determining the quality of "products" in both jurisdictions is whether the product is put into the "stream of commerce" [147] to allow to be considered in the light of §402A [148] and the AEMLD which itself is considered as a hybrid of strict liability and traditional negigence law [149]. The court adopted the argumentation of Alabama and Wisconsin Courts by citing:

> "All people in the distribute chain are stricly liable for injuries from a defective product if they are responsible for creating the defect and in a position to implement procedures

[144] Randy Rice et al. v. United Parcel Service General Services Co., 43 F.Supp.2d 1134 (D. Or. 1999).

[145] Ala Code 1975 § 6-5-501 (2).

[146] *Compare* Dippel v. Sciano, 37 Wis.2d 443, 459 (Wis. 1967), Kemp v. Miller, 154 Wis. 2d 538, 556 (Wis 1990).

[147] *Id.* (for Wisconsin), First Nat'l Bank of Mobile v. Cessna Aircraft C., 365 So.2d 966, 967-68 (Ala. 1978) (for Alabama under the AEMLD).

[148] RESTATEMENT (SECOND) OF TORTS (1965).

[149] *See supra* note 144, at 1144-1146.

> to prevent the occurence of similar defects in the future. ... The fact that a technical sale has not taken place should not relieve a manufacturer who placed defective merchandise on the market." [150]

Functually the Court decided hereby directly to the issue of defects in the software that controlled the DIAD (the whole handheld computer system which assisted the driver of UPS by the delivering of their mail/packages). Even if we pointed out (*supra)* that courts easily could resort to the hardware itself (in this case the handheld computer), the court stressed here much more the factor that the strict responsibility covers also all implemented procedures that influenced the dangerous effects of the product.[151] Therefore the Court stressed in Randy Rice v. UPS Services the first time the - in the ALI comments to the third Restatement of Torts (Products Liability) [152] - mentioned approach to include all influencing product parts in the (strict) product liability whereby the parts themselves were also considered as separate *"products"*, even if they are not tangible [153].

cc) HOU-TEX, Inc. v. LANDMARK GRAPHICS (2000) [154]

Nearly one year later (July/2000) appeared the HOU-TEX case, decided by the Texan Appellate Court referring to a case that was tried in the 14th District (Houston, TX). This case has to be taken as a landmark decision for software and product liability concerns. It

[150] *See supra* note 147, at 967 and *see supra* note 144, at 1145.

[151] *Id.*

[152] *See* RESTATEMENT (THIRD) OF TORTS, PRODUCTS LIABILITY (1998), § 19, Comment b.

[153] *Id*., § 19, Comment c. (especially with the stated proposals of the ALI to extent (strict) product liability issues to immaterial goods, especially when used as tools).

[154] HOU-TEX, Inc. v. LANDMARK GRAPHICS, 26 S.W.3d 103, 107 n. 2 (Tex. Ct. App. 2000).

can be disputed whether this decision constitutes a binding precedent or an obiter dicta only as to the question if software is a product in terms of (strict) products liability evolving in the law of torts. According to the filed complaint, the Appellate Court's main concern was, if plaintiff could claim economic loss under Texan law.[155] One of the subissues was then whether plaintiff could argue over the law of torts to get granted this goal. However, the Texan Appellate Court said in terms of software as a product liability "product":

> "We accept that the SeisVision software is a product for purposes of this appeal because, as shown by the undisputed summary judgment evidence, it is a highly technical tool used to create a graphic representation from technical data" [156]

and restricted carefully this general definition by saying further:

> "We do not imply that all software programs are products for purposes of products laibility [157] ... In the context of defective computer software, this is an issue of first impression for this Court [158]".

Up to this decision no court has ever drawn the line between the content of computer software and the content of other published materials as books and aeronautical graphic charts [159]. However, the line of argumentation goes along the Aetna [160] and Randy Rice

[155] *Id.* at 106.

[156] *Id.* at 107 n. 2.

[157] *Id.*

[158] *Id.* at 106.

[161] cases which means, it favorites the handling of software along the theory of abstract goods [162]. With the reference to "*technical tools*" the Court looked at software abstractly and did by no means look at the software "medium" that contains it. That the court eventually denied the applicability of the economic loss rule outside the contractual context does not change the view of the court that "*software*" is at least with these features a "*product*" in terms of (strict) product liability state law in Texas. For purposes of this analysis the case stands for the first direct approach to treat software as high technical tools that are getting to the consumer on a similar chain of distribution as other highly technical tools do, especially with reference to published aeronautical charts etc.

c) The theory of Separate immaterial goods

Many courts have based their decisions in the past also on First Amendment [163] concerns when issues of liability for information were involved. Of course these decisions are not considering software directly but other published materials so that this eventually can help to make predictions of further court decision in case of software.

aa) History of Information Liability concerns (1933-1983) [164]

The US history of information (product) liability concerns consists basically of 10 (federal and state) decisions during the 50-year period from 1933 to 1983, beginning with the

[159] *Id.* (In HOU-TEX the Court referred explicitly to Winter v. G.P. Putnam's Sons, 938 F.2d 1033 (9th Cir. 1991) which itself refers further to all the cases before dealing with the issue of the (strict) product liability qualifty of aeronatical charts, *see* and *compare further* the discussion of this case on page 76 of this analysis).

[160] *See supra* pages 69-71.

[161] *See supra* pages 71-72.

[162] *See supra* page 55.

[163] *See* FIRST AMENDMENT OF THE US CONSTITUTION (Free Speech Argument).

Layne v. Tribune case, over the Mac Known, the Sexton, the Rosenbloom, the Yuhas, the Gertz as well as the Time and the Cardozo, up to the Walter case.[165] The issues, developed mainly under the earlier cases, were later confined and defined by the US Supreme Court in the Gertz and the Time case on the constitutional level.[166] Explicitly in the Gertz case, the US Supreme Court said:

> "Under the First Amendment there is not such thing as a false idea. ... there is no constitutional value in false statements of fact. Neither the intentional lie nor the careless error materially advances society's interest in 'uninhibited, robust, and wide-open' debate on public issues. ... And punishment of errors runs the risk of inducing a cautious and restrictive exercise of the constitutionally guarateed freedoms of speech and press. Our decision recognize that a rule of strict liability that compels a publisher or broadcaster to guarantee the accuracy of his factual assertions may lead to intolerable self-censorship. Allowing the media to avoid liability only by proving the truth of all injurious statements does not accord adequate protection to First Amendment liberties. As the Court stated ... 'Allowance of the defense of truth, with the burden of proving it on the defendant, does not mean that only false speech will be deterred.' The First Amendment requires that we protect some flasehood in order to protect speech matters." [167].

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[164] Layne v. Tribune Co., 108 Fla. 177 (1933), Mac Kown v. III. Publishing Co., 6 N.E.2d 526 (Ill. 1937), Sexton v. American News Co., 133 F.Supp. 591 (N.D.Fla. 1955), Rosenbloom v. Metromedia, Inc., 91 S.Ct. 1811 (1971), Yuhas v. Mudge, 322 A.2d 824 (NJ. Super.A.D. 1974), Gertz v. Robert Welch, Inc., 418 U.S. 323 (1974), Time, Inc. v. Firestone, 424 U.S. 448 (1976), Cardozo v. True, 342 So.2d 1053 (Fla.Dist.Ct.App. 1977) (referred here to FL ST § 672.314), Walter v. Bauer, *see supra* note 129, Herceg v. Hustler Magazine, Inc., 565 F.Supp. 802 (S.D.Tex. 1983).

[165] *Id.*

[166] Gertz v. Robert Welch, Inc., 418 U.S. 323 (1974), Time, Inc. v. Firestone, 424 U.S. 448 (1976).

[167] *Id.* at 339.

This firm statement of the US Supreme Court was and still is the major rule and Gertz of course the authority to encounter (strict) product liability with objections on constituional grounds.

bb) Brocklesby v. United States (1985) [168]

As mentioned earlier, it is not clear whether we can take the superseding decision in Brocklesby as a signal further in the direction of refusing the application of (strict) product liability at all to published materials under the consideration of the First Amendment of the US Constitution by referring to the Gertz rule.[169] However, because of the vage and variable explanation in Brocklesby concerning the theory of separate immaterial goods, it has to be mentioned here.

cc) Winter v. G.P. Putnam's Sons (1991) [170]

The Winter case went 1991 in other (and much more constraint) ways than Brocklesby did. By deciding the Winter case, the 9th Circuit of Appleals decided 1991 under California law two very important questions: first, it denied the application of strict products liability to the content of a book stating wrong information about poisoness and non-poisoness mushrooms which led to a severe illness of both plaintiffs.[171] Beside this it decided, second, that even tort liability as to negligence is not applicable in a lawsuit against the publisher because the publisher had no duty per se to investigate the content of

[168] *See supra* note 97 (the second, superceding, decision); *Cf.* RRX Industries, Inc. v. Lab-Con, Inc., 772 F.2d 542 (9th Cir. 1985).

[169] *See supra* note 97 at 1295, *see supra* page 67 (development and brief discussion of that case).

[170] Winter v. Putnam's Sons, 938 F.2d 1033, 1034 (9th Cir. 1991).

[171] *Id.* at 1034-36.

every published book, at least if the book was neither partially written nor edited by the publisher itself.[172] As the appropriate reasons to impose an indemnity on the published content of such a book it said explicitly:

> "The purposes served by products liability law also are focussed on the tangible world and do not take into consideration the unique characteristics of ideas and expression. ... Plaintiffs' argument is stronger when they assert that *The Encyclopedia of Mushrooms* should be analogized to instrument approach information for airplanes are 'product' for the purpose of products liability law. ... We are not persuaded ... Aeronautical charts are highly technical tools. They are graphic depictions of technical, mechanical data. ... *The Enzclopedia of Mushrooms* is like a book on how to use a compass or an aeronautical chart. The chart itseld is like a physical product while the 'How to Use" book is pure thought and expression"[173].

Beside this the Winter case was even more astonishing because it referred as an obita dicta comment also to computer software as subject of products liability law by adding to its earlier statements as to "how to books" and "aeronautical charts":

> "Computer software that fails to yield the result for which it was designed may be another."[174].

However, computer software was not the issue in the case and it is doubtful that the 9th Circuit Court will not differenciate also at computer software the "how to" components

[172] *Id.* at 1037-38.

[173] Id. at 1035-36.

[174] *Id.* at 1036.

from the “depicting and highly technical tool” components. That this approach is problematic and questionable at all with computer software has already been explained.[175] Nevertheless, the 9th Circuit Court rejustified its decision as to aeronatical charts in the Aetna case [176] and referred accordingly to all the earlier mentioned cases that confined the influence of the First Amendment of the US Constitution to products liability law (e.g. the Jones, the Walter, the Herceg, the Smith and the Cardozo case [177]) as to the application of it to other published materials not being highly technical tools defined by the made description.[178]

dd) J. Birmingham et. al v. Fodor’s Travel Publications, Inc. et al. (1992) [179]

1992 the Supreme Court of Hawai had to decide (in) a case in which two injured swimmer brought an action against a publisher because they were injured at a beach although they relied on a travel guide that depicted the specific beach in detail but did not mention any dangerous condition that actually existed at that beach.[180] By more explaining the refusal of the application of strict liability doctrines to this travel guide in case, the Supreme Court of Hawai stated very significantly in terms of technical distinctions to other tort law approaches:

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[175] *See* discussion *supra* pages 9-17.

[176] *See* discussion *supra* pages 69-71.

[177] *See supra* note 164.

[178] *Id.* at 1036 n. 6.

[179] J. Birmingham et. al v. Fodor’s Travel Publications, Inc. et al., 73 Haw. 359 (Haw. Supp. 1992).

[180] *Id.* at 362-65.

> "Although there is always some appeal to the involuntarily spreading of costs of injuries in any area, the costs in any comprehensive cost/benefit analysis would be quite different were strict liability concepts applied to words and ideas. We place a high priority on the unfetted exchange of ideas. We accept the risk that words and ideas have wings we cannot clip and which carry them we know not where. The threat of liability without fault (financial responsibility for our words and ideas in the absence of fault or special undertaking responsibility) could seriously inhibit those who wish to share thoughts and theories."[181]

With this very specified support of the theory of software/information as a separate immaterial good the Supreme Court took the Winter case and gave a very satisfying explanation in favor of that theory. Hereby it gave 1992 also a better explanation of the Winter case than the 9th Circuit Court did itself. Nonetheless, this explanation may be satisfying to explain even the Winter case, but it does not solve the problem that appears when (a combination of) depictions of facts (as in aeronatical charts) and ideas (as in how to books) are involved, especially when a software contains both and the user is not able to distinguish the sources by looking only at the results that the software provides. Similar effects do even appear if a book contains a combination of factual depictions that are not a result of a plain transfer of information but of a calculation made by the author to improve the value of these information for the user.

ee) Joe James et al. v. MEOW Media et al. (2000) [182]

The Joe James case was a recent case of 2000 that was based on a tragic fact pattern: par-

[181] *Id.* at 375.

[182] Joe James et al. v. MEOW Media et al., 90 F.Supp.2d 798, 810-811 (W.D. Ky. 2000).

ents brought action against video game makers and distributors because a student killed their children whereby that student was alledgingly animated by this specific video game to do so.[183] The value of this case is insofar high as the fact pattern reflects, first, a computer software - the video game, and second, reflects a side effect because the claim was not based on the intention of the video game to entertain the students but more on that it triggered unintentionally an effect on the users that alledgingly should have been forseen by the video game makers and their distributors. The Kentucky District Judge granted the defendants' motions to dismiss the case in confirming the holdings in the Watters case and the third Restatement of Torts (Products Liability) § 19 which reflects not only the influence of all the earlier cases but also of the sc. "teachings" of the 6th Circuit of Appeals in the Watters ("Dungeons & Dragons") case (1990).[184] Nevertheless, the Watters case was decided ultimately not on Constitutional concerns but on the fact that Kentucky statutes restricted explicitly the liability to tangible goods and exempted intangibles.[185] Even if so, the Joe James case expresses a limited concern to the problem to integrate computer software into a strict liability regime: side effects are more a causational problem than a problem in terms of covering sc. intangible goods. Basically the Court in Joe James could rely on the fact that the case lacked a proximate cause. All other mentioned ideas have to be considered not more than obiter dicta.

d) Interim Conclusion (Software as a product, US Court Decisions)

The analysis has shown so far that US Courts when handling the software issue have

[183] *Id.* at 800.

[184] Watters v. TSR, Inc., 904 F.2d 378 (6th Cir. 1990).

[185] *Compare id.* at 811.

addressed (up to now) nearly all available theories as to (strict) product liability except three: the theory of embodiment (Wide/Narrow) [186], the theory of Risk-limitation [187] and the theory of Software effects [188]. To explain this - maybe in the first place suprising result - we have to look further into two principles which the US Common Law of today which we have to take additionally into account: First, the flexibility of the Common Law (compared with the staturory-based Civil Law System) does not force the US Courts to develop doctrines that adjust and thus open stricly fixed statutes to cover also non-mentioned items. Second, the US Courts are not obliged to follow the approaches of the second and third Restatement of Torts (Products Liability) when those Restatements describe "*products*" basically as "tangible goods".[189] Therefore the Common law experience of the US Courts guide US courts much more to apply abstract principles of comparisions between information/software and common tangible products. The US Courts decided mainly that only information/software that is used as a "*tool*" in a way similar to tangible products, can be considered in the area of (strict) products liability law.[190] So far information/software does not meet this standard, it is more considered as fully protected by the constitutional right of free speech under the First Amendment of the US Constitution.[191]

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[186] *See supra* page 53.

[187] *See supra* page 54.

[188] *See supra* page 55.

[189] *Compare supra* pages 24-30.

[190] *See supra* pages 69-74.

[191] *See supra* pages 74-80.

2. Second legal materials (software)

The question, whether software is a "*product*" in the law of torts when it considers (strict) products liability, is not mentioned in any Hornbook available right now [192], which underlines not only the handling of courts to be able to detour the problem by using the still existing all-in-one-combination approach to soft- and hardware but also by the fact that the newest cases dealing with software under this topic are from the late 1999 or 2000 and the newest Hornbooks (published in 2000) are based mainly on the fundamental developments of the law of torts up to the middle of 1999.[193] However, beside this, many authors of law review articles spent great efforts in the last 15 years in exploring the problem and publishing their ideas either by discussing the theoretical consequences of the already mentioned second and third Restatements of the Law of Torts (Products Liability) to these high-tech issue or by proposing new ways of handling.[194] Both facts might also reflect that, first, tortious liability is still a sensitive area whenever some kind of "*information liability*" is concerned and, second, that we might be close to a breakthrough in the US system as to a deeper and principal clarification of the topic; the fast developments in software architecture and programming makes it just a question of time that this will happen.

a) The theory of Mass-production

No author really addressed the strict product liability issue for software in tort law under a theory of mass-market production, so that we can only try to transfer carefully similar

[192] Even not in the newest Hornbooks as DAN B. DOBBS, THE LAW OF TORTS (1st ed. 2000).

[193] *See supra* page 56.

[194] *Compare supra* note 192 (which is the usual time period for publishers to print copies of the final release).

ideas out of other but related areas of law. Nimmer [195] tried in the Spring of 1999 to approach the sale of software and information under the stict (contractual) liability/ responsibility regime of the UCC. He describes “images”, generated by each of the existing areas of law, fitting for a general situation. Taking this as his starting point he tries to extent these general images to new and specific situations as they appear especially in the context of the transfer of software and information. He comes to the conclusion that “The program is neither goods nor services, it is information in digital form.”[196]. His major critique is further that courts are failing in adjusting the dichotomy between goods and services as out-dated in consideration of information and information technologies.[197] Eventually his core idea to follow the mass-market theory to diversify the manufacurer’s and seller’s risk by spreading it is made on the basis that the “image” (which he finds to be generated) considers that “the seller is always the dominant party, while the purchaser (consumer) is always the subservient party in need of protection.”[198]. But his way to apply the mass-market theory as an “image” is only the general approach that keeps exceptions when necessary: “In a true consumer market, the image has some relevance. Outside a context definde by the consumer mass market, this image is an incorrect model for commercial ... law development. The nature of the information marketplace accentuates the degree to which the inaccuracy exists”[199] in specific instances that have to be factually revealed by the courts.

[195] Raymond T. Nimmer, IMAGES AND CONTRACT LAW--WHAT LAW APPLIES TO TRANSACTIONS IN INFORMATION, 36 Hous. L. Rev. 1 (1999).

[196] *Id.* at 35.

[197] *Id.*

[198] *Id.* at 25.

[199] *Id.*

b) The theory of Risk-limitation

Also in Spring 1999 (as Nimmer *supra*) came Philips [200] up with the idea that some general restriction have to be implemented before thinking of and imposing a general liability regime for information and software.[201] Philips also uses some kind of images, but rather images of specific "conceptions of information" than those of types of appropriate legal transfer situations. The specific image discussed and analyzed by Philips was named by her the GIS (Geographical Information System) scenario.[202] She acknowledges a high demand of consumers to be protected against information-related dangers [203] but does not focus as Nimmer (*supra*) on the marketing situation, rather more on the liability for specific exempted situations in which information takes the role of dangerous goods as in the GIS image. Nevertheless, Philips recognizes even in this GIS scenario high risks for the GIS producers, so that she tends to fear "chilling effects" on the development and marketing process of useful information for the manufacturers/providers, especially by imposing general liabilities for (often) essentially necessary information for which a high demand in the marketplace exists.[204] Her idea is that also the consumer has to consider the advantvantages of these information. Thus, her proposed golden rule is to make it calculable for the manufacturers by establishing a liability scenario only after implementing official regulations to make the information marketplace safer than it actually were/is without them.[205]

[200] Jennifer L. Philips, *INFORMATION LIABILITY: THE POSSIBLE CHILLING EFFECT OF TORT CLAIMS AGAINST PRODUCUERS OF GEOGRAPHIC INFORMATION SYSTEMS DATA*, 26 Fla. St. U. L. Rev. 743 (1999).

[201] *Id.* at 761-777.

[202] *Id.* at 743-45.

[203] *Id.*

[204] *Id.* at 761-777.

[205] *Id.*

c) The theory of Software effects

After the first wave of discussing this issue in 1977-1980 and the second of 1983-1986 evolved the third wave in the beginning of the 1990s, accompanied of course by supporting judgments, where the fear appeared that mass-produced software could bring a huge negative impact on people's life who come in contact with dangerous software. The result was to back up the underlying ideas that are used by the theory of software effects (especially the replacement issue).[206] At once, four authors published their support: Levy & Bell [207] in 1990, Myers [208] in the beginning of 1992 and Weber [209] then in Spring of 1992 whereas all four had differnt concepts of transferring those ideas into the praxis.

Levy & Bell highlighted in 1990 the first approach and considered not only the performance of critical functions, even used for life support systems, in correlation to the real need to urge programmers via liabilities to employ reasonable standards in programming thoroughly such controlling programs, even with the use of back up routines.[210] This should reflect not only to the concrete marketing of the product in the way to explain the risks to the consumer but also to cover these imposed liabilities by insurances and indirectly by distributing insurance costs to all prospective consumers.[211]

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[206] *See supra* pages 11-12.

[207] Lawrence B. Levy & Suzanne Y. Bell, *SOFTWARE PRODUCTS LIABILITY: UNDERSTANDING AND MINIMIZING THE RISKS*, 5 High Tech. L.J. 1 (1990).

[208] Brett Lee Myers, *READ AT YOUR OWN RISK: PUBLISHER LIABILITY FOR DEFECTIVE HOW--TO BOOKS*, 45 Ark. L. Rev. 699 (1992).

[209] Lori A. Weber, *BAD BYTES: THE APPLICATION OF STRICT PRODUCTS LIABILITY TO COMPUTER SOFTWARE*, 66 St. John's L. Rev. 469 (1992).

[210] *See supra* note 207 at 27.

[211] *Id.* at 24-27.

Myers then made another proposal two years later specifically to the coverage of liability issues that arise in the context of How-To (instruction) books: Myers explored the capacity of state strict liability statutes and figured out that they are neither made nor capable at all to cover these new issues that are arising under what we understand nowadays under "information liability".[212] Myers support of the theory in favor of software/information effects is based on the "reliance" that a customer puts in his sale to purchase information in How-To books, as part of his own incentive to buy the book at all.[213] Myers denied arguments concerning restrictions based on the First Amendment of the US Constitution by stating:

> "Removing the shield of the First Amendment would not lead to a flood of litigation surrounding publisher liability. First of all, most books would not fit into the category of being proved defective. Only those highly technical, factual books--like science textbooks or field reference guides that are intended to be relied upon--would fall into this category. Other books, such as one entitled How to Live a Good Life, or How to Get a Job, for example, arguably contain only the author's opinions. The very fact that the book is an 'opinion' would alert the reader that he is free to accept or reject the author's ideas. Because proving an opinion to be wrong would be practically impossible, readers relying on opinions would do so at their own risk. ... Requiring a showing of fault would effectively bar recovery because a plaintiff most likely never would be able to prove negligence"[214].

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[212] *See supra* note 208 at 726-27.

[213] *Id.*

[214] *Id.*

Having both in mind, Levy & Bell as well as Myers, Weber followed in the Spring of 1992 with a more complicated proposal to solve the issue on the basis on the theory of software effects. Weber tried to combine both the fears and the necessities to impose a strict liability regime even on information and software products.[215] Therefore, she suggested the following approach: first, software should be "characterized" beforehand as a "product" under the strict liability theory as promulgated by the Second Restatement of Torts §402A and should only be excluded and held as a service when overwhelming characteristics require that; second, courts have to develop proper standards for the protection of the distribution of ideas and opinions under the First Amendment of the US Constitution; third, risks have to be balanced out against all the benefits that software in the specific situations can play.[216] Herewith Weber tries to comply with 5 general issues of a general strict liablility regime: (1) allocation of risk to those most able to protect themselves, (2) compensation for injuries, (3) alleviation of the evidentiary burden on the manufacturer's expertise, (4) compensation for purchaser's inabilities to inspect and his or her consequent reliance on the manufacturers expertise, and (5) discouragement of marketing of defective products.[217]

d) The theory of Abstract goods

The theory of abstract goods has been supported throughout the whole period in which strict liability for information and software products were concerned, from 1972 on by Russel [218], over Maule [219] in the Summer of 1992 and Wolpert [220] in 1993, to

[215] *See supra* note 209 at 483-84.

[216] *Id.*

[217] *Id.* at 484-85.

recently Lannetti [221] in the Summer of 2000. The content of this theory is so clear that the only deviation in the support lies in the argumentation and reasoning as to the wealth of the economy (at that time which) could easily bear liability risks evolving under an established strict liability regime.[222] Thereby, the theories are based on the fact that the market can solve its own problems, independantly from technical issues: the use of insurances or reserve assets that are considered as incorporated factors of the marketing process.[223]

e) The theory of Separate immaterial goods

Still in fashion, through all the periods of discussing the liabilities for information and software products, is the theory of Separate immaterial goods: Freed [224] began 1977 to challenge liabilities, based at all on the general approaches for information in tort law, that courts made for the protection of the freedom of speech under the First Amendment of the US Constitution. Later in May 1992 Miyaki [225] did exactly the same as it was opportune to oppose up-comming alternative theories that contested an over-all protection based

[218] Wiliam R. Russel, *PRODUCTS AND THE PROFESSIONAL: STRICT LIABILITY IN THE SALE-SERVICE HYBRID TRANSACTION*, 24 Hastings L.J. 111 (1972).

[219] Michael R. Maule Comment, *APPLYING STRICT PRODUCTS LIABILITY TO COMPUTER SOFTWARE*, 27 TULSA L.J. 735, 756 (1983).

[220] Thomas G. Wolpert, *PRODUCT LIABILITY AND SOFTWARE IMPLICATED IN PERSONAL INJURY*, 60 Def. Couns. J. 519 (1993).

[221] David W. Lannetti, *TOWARD A REVISED DEFINITION OF "PRODUCT" UNDER THE RESTEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY*, 35 Tort & Ins. L.J. 845 (2000).

[222] *Compare supra* notes 218, 219, 220 and 221.

[223] *Id.*

[224] Roy N. Freed, *PRODUCTS LIABILITY IN THE COMPUTER AGE*, 12 Forum 461 (1977).

[225] Patrick T. Miyaki, *COMPUTER SOFTWARE DEFECTS: SHOULD COMPUTER SOFTWARE MANUFACTURERS BE HELD STRICTLY LIABLE FOR COMPUTER SOFTWARE DEFECTS?*, 8 Santa Clara Computer & High Tech. L.J. 121 (1992).

on constitutional grounds, eventually on the same basis. A confirmation of this theory was given most recently by Schultz [226] in Spring 1999.

f) Interim Conclusion (Software as a product, US second legal sources)

The analysis of the US second legal sources shows that US authors considered from 1972 on a careful appliaction of the strict liability regime on information and eventually on software products. Nearly all mentioned theories [227] can be found in this line of strict liability history. However, one theory is left, that is the theory of software embodiment.[228]

II. Applicable theories under EU Tort law (Software as a product)

As an introductory statement, it has to be said that the theories are applied under the EU regime in a deviation, that is, that there is - because of the theoretical leeway [229] in refering to national definitions - a strong connection between “the generic European” and “those specific national” terminologies among the member states concerning “products” and “goods” as well as to “tangiblity” and “moveability”. To demonstrate this extremely important relationship in understanding the generic European term of “products”, the analysis points out - as a typical example - the situation of the German strict products liability

[226] Robert B. Schultz, *APPLICATION OF STRICT LIABILITY TO AERONAUTICAL CHART PUBLISHERS*, 64 J. Air L. & Com. 431, 446/447 (1999).

[227] *See supra* pages 54-57.

[228] *See supra* pages 53-54.

[229] We have already mentioned *supra* (pages 1-6) that there is no national defintion under the EU strict products liability regime. Anyway, the member states of the EU try to start with their own definitions based on their similar national terminologies. However, the leeway is left because of the lack of a precise definition in the Strict Products Liability Directive itself: 85/374/EEC.

statute of 1990 based on the legislative transfer of the European strict product liability Directive 85/374/EEC.[230]

1. National definition (Germany)

The German § 2 ProdHaftG ("Produkthaftungsgesetz") transfers the product definition of Art. 2 of the EEC Directive 85/374/EEC into national German law.

§ 2 ProdHaftG states (teleologically translated):

"Product in the meaning of this statue is every moveable thing - even if it is a part of another moveable or immoveable object - as well as electricity"[231].

Because, as mentioned earlier, the term "moveable thing" is not defined neither by the Directive itself nor by its transferring national statute due to its necessary conformity mandated by Art. 95 (former 100a) EC Treaty, the next step is to consider those national (German) statutes which define what products or even more "moveable objects" are. As far as

[230] For the meaning of this for the whole situation as well as the influence for the interpretation of other national terms, *see id.* (pages 1-6). The interaction under the German Civil Law System is at the same time certainly the most strict approach insofar the German Civil Law System tried in the past not to deviate from the major Roman Law principles and tried - when not following the Roman roots - to develop and improve its systematic structure by adopting more sophisticated mechanisms than all other Civil Law Systems as the strict separation principle of the law of obligations and the law of performance of obligations which also impacts the strict separartion of the law of contracts and the law of torts. By adopting these mechanisms and consequential mechanisms to cover further problems in these areas of law in more technical way on a legal basis, the German Civil Law opens appropriately the discussion for understanding the relationship between current Civil Law doctrines and the newly established European strict products liability regime.

[231] § 2 PRODHAFTG of December 15, 1989 (German BGBl. I, p. 2198); the second sentence of § 2 PRODHAFTG concerning the non-quality of raw material is omitted, not only because it is not relevant for the analysis at this point, but also because it is likely to be stricken out, PALANDT/THOMAS, PRODUKTHAFTUNGSGESETZ § 2, n. 4 (60th ed. Munich Germany 2001) (based on EC DIRECTIVE 99/34/EEC of Mai 10, 1999).

German Civil Law is concerned, only one statutory provision can be taken as a basis, § 90 BGB ("Bürgerliches Gesetzbuch" which is the German Civil Code).

§ 90 BGB states (teleologically translated):

"Things in the meaning of this Code are only corporeal objects."[232].

First of all, neither § 2 ProdHaftG nor § 90 BGB is starting with the term "moveable object" as the English version of the Directive states. The reason is the, just mentioned, highly conceptual consistence the German BGB is trying to reach [233]. The German BGB uses both terms "things" and "objects" to distinguish among various aspects of the law in the field of obligations, of personal and real property, of intellectual property rights and of other specific "values".[234] However, the distinction will be explained further when necessary. With this defintion and the mentioned distinction in mind, the analysis can start to approach the different opinions concerning both statutes among German courts and according the German literature.

2. Case Law (software)

a) Germany (case law)

aa) Based directly on the ProdHaftG (based on 85/374/EEC)

As far as immaterial performances like computer programs or the content of books are

[232] GERMAN CIVIL CODE, BÜRGERLICHES GESETZBUCH as of August 18, 1896 (RGBl., p. 195), into force since 1.1.1900, in the newest release of June 27, 2000 (BGBl. I/2000, p. 897, ber. p. 1139).

[233] *See* explanation note 230.

[234] *Compare* approach of § 433 BGB; PALANDT/PUTZO, BÜRGERLICHES GESETZBUCH § 433, 1) a)-f) (60th ed. Munich Germany 2001).

concerned, until now, no German court has ever ruled explicitely on that issue under the new EU strict liability regime established by the EEC Strict Product Liability Directive. Whenever commentaries refer to the issue of determining the product quality, they refer to older and continously confirmed authorities (court decisions) based on the description of "things" in the general book (the first book) of the German Civil Code (especially § 90 BGB).[235]

bb) Based on the description of § 90 of the German Civil Code

German courts began to concern incorporeal goods in 1887 when electricity began to contest Civil Law rules [236]. Then the German Reichsgericht (Supreme Court before and during WWII) said that the characteristics of electricity can be similar to those of corporeal goods.[237] Two further decisions came up 1897 and 1899 in the context of the criminal penal code (thereby referring to civil law issues) when the German BGB was already finalized and passed as a law (1896).[238] Those decisions referred explicitly to current studies of natural sciences at that time and judged by considering the uncertain knowledge of the characteristics of electricity and entered into the result: electricity could not be assessed as corporeal good, at least not in the context of criminal penal code provisions which refer to the Civil Code.[239] The first time the German Reichsgericht (Supreme Court before and during WWII) addessed the capacities of electricity when the new Ger-

[235] PALANDT/THOMAS, PRODUKTHAFTUNGSGESETZ § 2 1) (60th ed. Munich Germany 2001).

[236] At that time the court had to deal with a tax code provision that was established even before the GERMAN CIVIL CODE of 1897 was in operation (begin was 1/1/1900) though many drafts of its parts were finalized at that time; *compare* RGZ 17, 269, 272-73 (1877).

[237] *Id.* at 272-73.

[238] RGSt 29, 111, 116 (1896) and RGSt 32, 165 (1899).

[239] *Id.*

man Civil Code was already in operation in 1904 as it said that electricity is no "good" in terms of corporality of the Civil Law. This was also the point in time where the Reichsgericht splitted the legal interpretation from the scientifical interpretation where in science was already acknowledged that electricity is nothing else than moving physical bodies spinning around an atomic body on different levels of energy and speed.[240] Since then the connection between the legal and the natural science interpretations were separated. Other decisions in this field followed later this basic decision of the Reichsgericht of 1904.[241] This opinion was and is still the line on which the German judicature bases its decisions when it comes to this point. A further and specific decision as to whether "immaterial goods" are "things" in the sense of coporality is not spoken yet. Only for the merchandisability of standard computer software in the legal field of the sales of goods contracts, the German Bundesgerichtshof (Supreme Court after WW II) said that standard computer software can be treated analogously to corporeal goods when the contractual form as a sales contract only is concerned by leaving out the question if computer software is a corporeal good or not.[242]

b) Other EU member states (case law)

Exactly the same dispute can be found in all the other member states of the European Union, especially also in Austria as the only state where the national transfer of the EU Directive 85/374/EEC into domestic law was equipped with an explicit reference to the definitions of "things/coporeal goods" in the Austrian Civil Code.[243] An ultimate deci-

[240] RGZ 56, 403 (1904).

[241] RGZ 86, 12, 13 (1914); OLG Düsseldorf HRR Case 364 (12/31/1937); BGHZ VIII ZR 232/(KG) (11/26/1957).

[242] *Compare* BGH NJW 1991, 915, 916 (Case of 12/5/1990).

sion of the European Court of Justice is not in sight yet which shows that up to now no dispute in the member states triggered a danger in which a deviation of application of the EU product liability among the member states caused a non-conformative interpretation concerning national/domestic law based on the EU Strict Liability Directive 85/374/EEC.

3. Literature (software)

The German literature has developed six theories that try to solve the relationship between the EU strict product liability and the application of the national definition of "things".

a) Theory of narrow embodiment [244]

The expression "tangible object" used in § 2 ProdHaftG has to be determined by following the narrow determinations and strict rules employed by § 90 BGB as to "things": "tangible objects" in the meaning of § 2 ProdHaftG can then only be certain pieces of the inhibited nature - perceptible as corporeal objects.

b) Theory of wide embodiment [245]

Der expression used in § 2 ProdHaftG has not be determined by using the interpretation of the related terminology of § 90 BGB because the German Civil Code enacted in

[243] *Compare* the Austrian BUNDESGESETZ VOM 1. JÄNNER 1988 ÜBER DIE HAFTUNG FÜR EIN FEHLERHAFTES PRODUKT (PRODUKTHAFTUNGSGESETZ), BGBl. 1988 Nr. 99, changed by BGBl. 1993 Nr. 95 and BGBl. 1994 Nr. 510.

[244] *Compare* KULLMANN/PFISTER, PRODUZENTENHAFTUNG, Vol. 1, Kza 3603, 5 (Berlin Germany 07/1994); LANDSCHEIDT, DAS NEUE PRODUKTHAFTUNGSRECHT Rn 33a (1st ed. Herne/Berlin Germany 1990); *cf*. Bauer, *Produkthaftung für Software nach geltendem und künftigem deutschen Recht*, PHI (Produkthaftpflicht International) 1989, 98, 99; NAUROTH, COMPUTERRECHT FÜR DIE PRAXIS 188 (1st ed. Munich Germany 1990); vWestphalen, *Das neue Produkthaftungsgesetz*, NJW (Neue Juristische Wochenschrift) 1990, 83, 87, Junker, *Ist Softwaer Ware?*, WM (Wertpapiermitteilungen) 1988, 1217, 1218; Holzinger, *Produkthaftplicht und Software*, EDVuR (EDV und Recht) 1988, H 4, 10 f.; Hauter, *Anmerkungen zum Urteil des BFH vom 3. Juli 1987 zum Thema Computerprogramme als immterielle Wirtschaftsgüter*, CR 1987, 576 f.; MÜNCHKOMM/MERTENS-CAHN, PRODUKHAFTUNGSGESETZ § 2 Rn 7 (Munich Germany 1/1995).

1900 is not capable of covering the most modern state of art reflected et alier by computer software; the terminology of § 2 ProdHaftG has to be construed much more openly than the terminology of § 90 BGB; the expression of "tangible objects" covers therefore also all non-corporeal objects which we handle and treat equally in the general line of today's businesses. To equate them here with other corporeal products forces us necessarily to equate them even so in the light of products liability law.

c) Mass-product theory [246]

The used expression of "objects" in § 2 ProdHaftG needs to be interpreted very broadly und covers products, that are manufactured/produced along general demands and requirements for a multitude of users - thus all kinds of mass products; the reason: in the preamble of the draft of the 1979 EEC Strict Product Liablity Directive stated explicitly:

"The Liability covers only moveable objects that are subject of an industrial manufacturing process" [247].

d) Theory of risk-limitation [248]

The expression of the "objects" in § 2 ProdHaftG as a way to define the quality of

[245] *Compare* vWESTPHALEN, PRODUKTHAFTUNGSHANDBUCH § 61 Rn 42-44 (1st ed. Munich Germany Germany 1997); Koutses/Lutterbach, *Auswirkungen des Produkthaftungsgesetzes auf Informations- und Steuertechnologien*, RDV (Recht des Versicherungswesens) 1989, 5, 6; SCHMIDT–SALZER/HOLLMANN, KOMMENTAR ZUR EG-PRODUKTHAFTUNG, Bd. 2, 4 B-9 Rn 12 (1st ed. Heidelberg Germany 1990).

[246] *Compare* POTT/FRIELING, KOMMENTAR ZUM PRODUKTHAFTUNGSGESETZ § 2 Rn 42 (1st ed. Essen Germany 1992); Hoeren, *Produkthaftung für Software*, CR (Computer und Recht) 1988, 908, 911; *id.* PHI (Produkthaftupflicht International) 1989, 138, 142; Engel, *Produzentenhaftung für Software*, CR (Computer und Recht) 1986, 702, 707; *cf.* KULLMANN/PFISTER, PRODUZENTENHAFTUNG, Vol. 1, Kza 3603, 5 (Berlin Germany 07/1994); Kort, *Fehlerbegriff und Produkthaftung für medizinische Software - Einordnung im deutschen und us-amerikanischen Recht*, CR (Computer und Recht) 1990, 171 (174); vWESTPHALEN, PRODUKTHAFTUNGSHANDBUCH § 61 Rn 43 (1st ed. Munich Germany 1997); Meier/Wehlau, *Produzentenhaftung des Softwareherstellers*, CR (Computer und Recht) 1990, 95, 99.

[247] Official Journal of the EEC 1979, No. C 271, p. 3 (4/right column).

potential products under the EU strict product liability regime has to be determined differently than the strict definiton of the terminology of § 90 BGB; the term "objects" has to reflect the incentive to avoid liability by establishing the requirement that the manufacturer could have had actually the possibility to know about the defective condition of a specific product, timely located at least in the moment when the product leaves the production process and is to be delivered out in the market and to the customer. A liability only based on abstract concepts of risk- and loss-spreading has never been part of the European strict product liability so that manufacturers/producers do not have to bear risks that are approached only by a general application as such.

e) Theory of effects [249]

The expression "objects" in § 2 ProdHaftG has to be construed wider than that of § 90 BGB based on the consumer safety function that the new European strict products liability establishes and stands for - complying with the official preamble of the Directive. Accordingly, this means also that the newly imposed European strict liability covers also objects which have not only the same characteristics as typical corporeal objects but also the same potential impacts on their environments.

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[248] *Compare* Bauer, *Produkthaftung für Software nach geltendem und künftigem deutschen Recht*, PHI (Produkfhaftplicht International) 1989, 98, 101/102; *cf.* TASCHNER & FRIETSCH, PRODUKTHAFTUNGSGESETZ UND EG PRODUKTHAFTUNGSRICHTILINIE Art. 6 Rn 28 (2d ed. Munich Germany 1990).

[249] *Compare* ROLLAND, KOMMENTAR ZUM PRODUKTHAFTUNGSRECHT §2 Rn 17 (1st ed. Munich Germany 1990); Foerste, *Die Produkthaftung für Druckwerke*, NJW (Neue Juristische Wochenschrift) 1991, 1433, 1438/1439; Hoeren, *Produkthaftung für Software*, PHI (Produkthaftpflicht International) 1989, 138, 141; Bauer, *Produkthaftung für Software nach geltendem und künftigem deutschen Recht*, PHI (Produkthaftpflicht International) 1989, 98, 106; TASCHNER & FRIETSCH, PRODUKTHAFTUNGSGESETZ UND EG PRODUKTHAFTUNGSRICHTILINIE §2 Rn 22; vWESTPHALEN, PRODUKTHAFTUNGSHANDBUCH § 61 Rn 43 (1st ed. Munich Germany 1997); Hollmann, *Die EG-Produkthaftungsrichtlinie (I)*, DB (Der Betrieb) 1985, 2389, 2390-91; Junker, *Ist Softwaree Ware?*, WM (Wertpapiermitteilungen) 1988, 1249, 1253; SCHMIDT–SALZER/HOLLMANN, KOMMENTAR ZUR EG-PRODUKTHAFTUNG, Bd. 1, Art. 2, Rn 66; GÜNTHER CR 1993, 544, 546.

f) Theory of abstract goods [250]

The terminology of § 2 ProdHaftG goes further than that of § 90 BGB. Under § 2 ProdHaftG are falling also "goods" being similarly delivered through the chain of distribution to the consumer; the major goal and reason of the new European strict products liability is to protect the consumer as a result of the marketing process, so that the way from the manufacturer to the consumer is the only reasonable factor to decide about applicability and non-applicability of the new liability law: the only factor to determine the "product" quality of objects however produced or manufactured.

III. Summary Statement and Discussion

The analysis shows that no discussion exists that represents the idea to refuse to apply the new European strict products liability to software or infomation. The most significant factor, however, is that the theory of immaterial goods is totally disregarded by the US Common Law approach [251] whereas in the European Union much more a further distinction takes place, between a so-called narrow and wide theory of embodiment [252]. Of course, this distinction can lead to the exemption of the liabilities for such products but only in specific ways and in specific situations. One of the most important issues of this analysis is now to explain why such significant differences exist between the product liability regime of the US and that of the EU. Hereby, the analysis has not only to face further developments and conflicts in this area of law that are caused by these considerable devia-

[250] Meier/Wehlau, *Produzentenhaftung des Softwareherstellers*, CR (Computer und Recht) 1990, 95 (99); Koutses/ Lutterbach, *Auswirkungen des Produkthaftungsgesetzes auf Informations- und Steuertechnologien*, RDV (Recht des Versicherungswesens) 1989, 5 (8) (similar).

[251] *See supra* pages 64-89.

[252] *See supra* pages 89-97.

tions between both systems in the future, but also if these different approaches are justified at all so far as information technologies are concerned.

Chapter

F. Explanation of differences

Up to now we have seen that both the US and the EU system are having the same underlying idea of consumer protection in mind while they both go different ways to find a just way for the application of liability law by considering the impact which liabilities have on the economy on the one side and the consumer on the other. We found out that the US approach changed continuously from the early 20th century (development to a strict liability regime) to the late 20th century (development back basically to a negligence regime). The member states of the EC/EU vice versa had mainly only a negligence before the EC Product Liability Directive was passed in 1985 and was transferred later into domestic member state law. The developments to this EC/EU Directive began in 1968 with the eyes on the international (trade) situation after the GATT-Kennedy-Round (1962-1967), where especially the US began to develop strongly in the direction of pure strict liability regimes.[253] Even as later the oil-crisis appeared and triggered that the US situation changed in favor of negligence regimes, the EC followed its once entered way and developed one strict liability regime for all current and future members of the EC/EU established then and now by the EC Directive 85/374/EEC that has to be transferred into domestic member state law. The EC/EU authorities (especially the EC Council) thought that the only way to establish a straight forward community law - without any following disturbances among the different member state laws - was to choose eventually the strict

[253] *See supra* pages 25-26 (in 1965 the Restatment (second) of the law of torts confirmed this development among the US State Courts).

liability regime. The EC/EU founded hereby a common approach also due to the fact that this supports much more the reliability and strength of the internal economy than without.[254] So far as the US developments are concerned, one can realize easily that it is much harder to bring fifty (compared with fifteen in the EU) independent states in the US together to do the same thing, even if it would be even better to do so and to comply with one rule to further the US internal market economy. However, right now such an approach is not really imaginable after the highly sophisticated debate of US tort law that took place in the US in the middle and late 20th century.

Another reason why both systems are thinking differently in their concers is certainly that the European approach can and has to consider also other EC/EU Directives that were already passed or intended in terms of a fully planned framework for consumer protection laws and other adjusting laws that are bringing the different standards together in order to make the EC/EU more efficient, and obviously, to strengthen the EC/EU economy in order to make it more competitive.[255]

Another issue coming up in trying to determine the usage and the content of this area of law is certainly also the tradition on which both systems are based: the US Common Law (based on judgments) on the one side and the EU Civil Law (mainly based on statutes) on the other. It appears to be obvious that a system which can define by one statute a nation-

[254] *Compare* hereto especially the statements of the Preamble of the EC DIRECTIVE 85/374/EEC where all these arguments are mentioned.

[255] *See* the guidelines for the whole EU DIRECTIVE concepts and the newest developments in that at "http://europa.eu.int/comm/enterprise/newapproach.htm" (in the eleven official languages of the EU).

wide interpretation of a specific term has advantages whereas a system which allows to deviate easily from terms that have been even determined and established by other states - especially when it comes to a traditional area of state law (here tort law) - has much more difficulties to do so. But, by considering the world market situation, another issue speaks in favor of the strict liability regime: the more strict and threatening (in terms of liabilities) tort law systems for domestic producer are, the more easy it is to trade their goods into an area which has less strict rules. Vice versa products set up basically for a less strict system usually have to be adjusted which requires additional efforts and costs only to comply with a second approach. The question whether the fear of liablities or the costs of further considerations as to the product will overcome, is one, which can only be shown by future developments in both economies and their laws.

Chapter

G. Solving current and future software issues under Tort law

This brings us back to the problem if and how we can find a solution for both tort law systems in cases of product liability when it comes specifically to computer software as a product to handle here.

Based on the explanations to computer software given in the first part [256] by describing the the different types and the different working principles in which computer software behaves, we have to analyze the software and to apply the projections of the tort law systems to specific computer software appearances. Or, in another way, we have to define a way that can approach the different types of software with a general idea, based on the view a consumer and the market assesses the situation by facing computer software in the praxis.

The major threshold we have to face with the consideration under a product liability remgime is certainly the fact that software (as explained [257]) is more and more (on) to exchange all mechanical devices where it is reasonable to do so due to savings in cost or savings in weight or as a further very important factor: less consequential costs due to a reduced susceptibility to damages because of less wear and tear. How can we deal then with a product liability that excludes computer software producers from any liability? If,

[256] *See supra* pages 9-17.

[257] *See supra* pages 11-12.

then it would be a certain incentive to reconfigurate products from mechanical to electronical devices to escape the liability that was formerly applied to the classic mechanical devices.

I. Feasibility of common approaches in both systems

1. Feasibility under EU Tort law

Under the EU product liability regime we have this challenge transferred to the question whether the content of software, so software itself, can be - at least - deemed as a “good” or “thing” in the meaning of the law that is derived from the EU Product Liability Directive 85/374/EEC. Insofar as the way of legislation of this EU Directive finally does not show any exception in the handling of individual products [258], the EU approach does not actually care about whether software is individually-produced (set up as a service) for a specific consumer/group of consumers or whether software is mass-produced to be compared with a standard product.

When the free speech issues are concerned, the EU product liability does not have any problems dealing with them. This is based on the conceptual features of statutorial Continental Civil Law concepts which are basically incorporated in the EC Product Liability Directive. The underlying idea is that whenever a statute covers something then is has generally spoken to be applied to it. The basic principle that accompanies this feature is that it is presumed that the legislative thought of constitutional issues before they enacted a new statutory law. But anyway, the EU Product Liability does not have any problems

[258] *See supra* pages 30-37.

with covering software or intellectual content in books as products. The much more important question is if the content of a book or a software can be deemed to be defective, but this issue cannot be handled broadly, it is rather more a question of the specific case and fact pattern. Probably one will come easier to the conclusion of defectiveness in cases in which books or software are instructing the user, rather than in cases in which they are only informing the user broadly. Of course, there is a leeway and of course then some kind of uncertainties: furthermore the complexity and mixture of more than one content will not make it easy for observers and judges to figure out whether a content or a software can be held defective. Nevertheless, this issue comes in the second and not in the first place.

2. Feasibility under US Tort law

When it comes to the individuality of a product and then also of software, the US product liability sees a difference between the product liability for standard and for individual products. Never mind, as we have seen also [259], the technical approaches of software that is nowadays programmed, marketed and distributed does not consist of a technique that is pretendable to be a real individual software. This presumption fits in 95% of all individual software which is out nowadays. When we base our analyzis on this fact, then even the US system does or at least should not actually provide a different outcome on the theory of mass-production compared with services - so far as software is concered.

The flexibility of the US system does not really rely on the requirement that a product under the US product liability regime has necessarily to be a corporeal good. But this flex-

[259] *See supra* pages 82-84.

ibility is contested also flexibly by another challenge in the US system, that is, to solve the conflict between the First Amendment of the US Constitution including its guaranteed right of free speech on the one side and the liability issue for information on the other. Finally this conflict (as already shown [260]) has to be balanced out by determining whether a factual deviation of the design (right information) from the actual performance (stated information) is given or not. To reduce this danger - of course - the information provider can give additional and reasonable information to explain the use of the provided information. Whether it was reasonable or not, anyway, to provide such a kind of information is a question in detail and has to be decided by a judge in the specific case. Nevertheless, these scenarios bear still significant risks for information providers. Even with these warning provisions, they are not exempted from liability and the information could be held both deficient and defective, so that in even unexpected situations a ground for liability could be given. The same idea applies probably also to computer software due to the fact that nobody can really differenciate systematically computer software from purely presented information.

II. Available models

Basically two approaches are available, a model that recognizes not only all different kinds of law internally by combining them to a general approach to product liability even for all types of computer software, or a model which separates all different types of computer software and applies them to specific aspects of law under which they seem reasonable to analyze.

[260] *See supra* pages 17-22.

1. Application of a ’Separation Model’

The first alternative is to use a Separation Model. A separation model has the advantage that it seems much more dogmatically clean to be subsumized. This seems insofar reasonable as we know the different ways in which the software can appear [261]:

a) Beginning with the “Horizontal Structure” (Form)

As we have already seen earlier, we separated computer software into the “Informing Software”, the “Supporting Software” and the “Controlling Software”.[262] To these separations into types of different forms could be applied a different law. We could use constituonal concerns to apply them only to all software that appears to inform only the user to consider constitutional rights to provide the unrestricted guarantee of a free speech.

Beside this, we could also treat the controlling software [263] differently and like a classic product because it obviously represents the interface to the outer environment in which the user stays and which then also is directly in charge of incidents/accidents that are triggered by the computer software.

Obviously we could theoretically go on with this line of handling of computer software and could treat this kind of software on the case: when it comes to the intermediate “Supporting Software” [264], it connects as a next interface the “Informing Software” with the

[261] *See supra* pages 9-17.

[262] *See supra* pages 9-10.

[263] *See supra* pages 10-11.

[264] *See supra* pages 10-10.

"Controlling Software", so that we have to determine in which form it worked in that moment.

This formalistic way is certainly an attempt to approach the liability issue under the different systems of product liability law. Certainly this approach comes closer to the EU system that determines its applicability much more on specific terms as the legal quality of the as a "good" or a "thing" as some kind of entrance to strict product liability law: a reflection of the huge influence the Civil Law has on the European legislation. Beside this fact, the formalistic way in terms of computer software meets with resistance based on the interaction all these three types of software do have among them. How can we really determine at which part, which particular information, and of which source the information comes that triggered the incident which eventually causes some effect to the enviroment in which the computer software is used in? The complexer software is, the more the problems will occur in the earlier stages of software and less in the controlling software itself. Moreover, even a back-up system at the level of the controlling software will barely figure out that the information given by the other types of software, is wrong.

Actually the same situation comes up when we try to assess the form of the "Supporting Software". Of course, the controlling software can consist of errors entered by erroneous built programs. And if not, how can the supporting software assess the relyability of information that is provided by the "Informing Software"? This problems is getting even worse when we consider that a part of the "Informing Software" can be based on entered information provided by the user himself. This shows that in all these situations, back-up sys-

tems are nearly senseless. Complying with this result, we have to recognize: due to the lack of being capable to determine and allocate a definite problem to a specific part of the software, a differenciation between software types in form and applying to them different laws is irrational.

b) Going further to the “Vertical Structure” (Function)

A quite similar situation encounters us when we try to fix a different handling of product liability issues in terms of the “Vertrical Structure” in which computer software works.[265] By analyzing the vertical structure we also encouter the issue that we needed a straight way to determine the level indication in this software hierarchy system. We have closely the same problems which we already faced by allocating liability responsibilities to the “Form” in which software works.[266] The complexity of software nowadays strikes out all attempts in these directions of assessment and is insofar no good way to even come close to the problems and errors in which computer software is working with internally.

c) Finding the end in the “Working Structure” (Logic)

Finally we struggle most with the “Working Structure”.[267] The different logics that software is using is totally inassessable for the allocation of liability issues. What we find today in computer software is basically never a working “fixed” or “fuzzy” logic, or some kind of “AI”-software. What we basically find in today’s software, especially when the

[265] *See supra* pages 11-12.

[266] *See supra* pages 106-108.

[267] *See supra* pages 12-17.

software gets sophisticated for specifically those situations that can cause damages and therefore is in scope of product liability issues is a combination of at least fixed and fuzzy logics. E.g. in the case of medical treatment: no consumer will ever assess those working principles when he is treated by a medical device which is controlled by a sophisticated computer software issued and officially certified for this kind of medical treatment.

Finally an assessment on the basis of a diversified application of liability rules on the complex interconnections and interfaces which software consists of has to fail due to the lack of finding any reasonable point to start with. Consequently all attempts to employ such kind of “Separation Model” is inapplicable for almost all problems associated with computer software and either risk utility- or consumer expectation- assessments which are basically the two main ways to consider the liability for products freely-marketed into the common consomer markets.

2. Application of a ’Combination Model’

a) Generally

What is left for the assessment of computer software under product liability regimes, is then a general approach, summarized with the idea of a so-called “Combination Model”. Combination Model in this usage is nothing else than disregarding the different types of computer software because of the lack of assessing them adequately for the purposes of assigning damages based on product liability law.One can name it powerlessness or even destiny that the sciences placing more and more the information technologies into our common life and environment. Nevertheless this development forces the law to make con-

cessions. Even if we stay with our thoroughly developed authorities concerning product liability law, we have to reconsider nearly all aspects dealing with computer software: acknowledging and imposing liabilities for computer software means also acknowledging and imposing liabilities for common information. As far as we struggled with this kind of liability in former times, a reconsideration has to follow. It has to follow to make the law consistent with both the general consideration of information and that of technologies that are using information as their core existence. Due to the fact that computer software strikes traditional views in cases bacause of the replacement features of traditional technololgies, we have to accept that computer software has to be fully considered and approached by the product liablity laws, then also by that of the US and the EU. Another way, contrary to this, is neither feasible nor just - especially not, when we consider all the results which this study has displayed [268].

b) In terms of design defects

As even as pivotal as the concession in favor of the Combination Model generally, is certainly the question whether it is then further reasonable to have a devision between development, design and manufacturing risks when computer software is the issue of the case.

Again and again we have to question whether traditional ideas and approaches are contested solely by the pure existence of computer software in this field of law. Also when we consider the separation of development, design and manufacturing defects. Can we really say and reasonable argue that the programmer manufactures a computer software purely

[268] See all the technical and legal issues that raise incompatibilites and inconsistencies among virtually all types and kinds of attempts that have been proposed in this field, *compare* e.g. the problems of proposed theories on pages 53-63.

on the basis of a concept. In turn, he has much more to do than to transfer a concept. Strategies for the establishment of a computer software is a long-term process of improvements. Concepts for computer software are always based on configurations that are not given by the software company itself. Application software mostly relies on configurations of other application software that relies on configurations of the used operating software system that relies further on configurations of the so-called firmware (a basic software controlling the hardware system) that itself relies further on configurations given by producers of hardware components like chips and other highly complicated constituents. Not rarely an overheating or malefunction of electronic components can cause malefunctions that appear as malefunctions of the software which was then not in charge at all. So at the other end of computer systems even the environment itself can trigger defects that vice versa can cause at the environment - a circulation process that never appeared before in common life in such an amount as it daily happens in the context of computer applications.

Coming back to the role of a programmer: beside these conventions and configurations, a programmer is only another designer beside those who developed the concept for the computer software in the first place. Furthermore, we are also far away from reality when we look at the process of copying software as the manufacturing process: the next designer and programmer that is waiting for the computer software are reconfigurators and finally the computer user itself. Not seldom he finalizes the software in terms of specific configurations that could cause so-called further “illegal operations”. Ultimately we come to the point that computer software never can be without defects only because of a complexity

we have never faced before: too many factors, too many environments, too many possibilities and capabilities. Here at this point the complexity of computer software shows that it is not possible at all to approach computer software barely with our traditional concepts we apply for traditional goods and products. By considering software, terms as development, design and manufacturing defects do not only get another meaning, these terms also loose their identity and are getting meaningless in these contexts. When the US product liablity law separates between design and manufacturing defects, in the software context, the US system has to reconsider their approaches to the applicable standards of liability - strict liability or negligence.

c) In terms of strict liability or negligence

Taking the just stated scenario into account, we have to admit that - in the case of computer software - the difference between the manufacturing process and the development/ design process is vanishing, it can be uphold only virtually or artificially but not as a reflection of realities. Thus, the analysis ends up with a situation that challenges traditional tort and liability (especially products liability) concepts by acknowledging that commonly used kinds of assignments are not applicable any longer on a proper basis. The switching process between both negligence and strict liability is loosing in the case of software its fundamental basis, so that it seems to be arbitrary to choose both and not to choose between them to find an appropriate solution. Beside this, the complexity of today’s software strike also negligence concepts at all; whenever a potential plaintiff has to proof negligence on the side of the software manufacturer, the plaintiff has to deal with non-traditional difficulties. Even experts testimony will all the time show that - in terms of

negligence - the manufacturer often has to be released of liability because of the fact that software developments are all the time accompanied with inefficiencies resulting out of the problem that nearly no complex software can be programmed without faults due to its complexity of internal and external interfaces. On the other hand it is inappropriate to release them at all from liability aspects; this would finally result into a leeway that opens doors by which the end-user has to bear all the risks of the software's application. When the end-user cannot rely on the appropriateness of a software product, he will not use it. And if he has to use it because of specific necessities in that line of business, the consumer will be suffering under these facts. Nevertheless, to exempt software from liability totally would have more the effect that the use of software will be reduced than increased. The same is applicable for developments in software products. To encounter such a development, one has to put a software liability where it belongs: to the only appropriate liability pattern in terms of liability that can accomplish this goal, the strict products liability. The application of strict products liability guarantees the end-user and consumer that all the problematic issues that arise in the context of the "impossible-to-make-it-really-safe-due-to-its-complexity" can be covered by the manufacturer and finally by either by liability reserves or insurances.

Chapter

H. Conclusion

The conclusion that is drawn and proposed by the analysis is quite clear: when we consider software as an object to which we like to apply liability law and standards, we have to re-evaluate and re-consider the options that are given by the traditional liability laws. It is true that both the US and the EU are following different concepts in the field of products liability (negligence/strict liability) but still: the concept of negligence has huge problems in assessing software and thus eventually in solving the software issue. This scenario causes inconsistencies in both systems (EU and US). In a long-term view nobody really doubts the inappropriateness of negligence law as the mostly applicable law for these kinds of problems. The more complex software will be, the more problems will occur to assess the whole situation and to give a consistent result. Even if we have right now less problems with the software issue due to the fact that most software in situations likely to cause dangers to the end-user/customer comes along a combination with hardware to make out of both one product (a product-bundle), we will have to face in the future with a separation of both. Then a liability system which relies on a devision of negligence and strict liability will fail to handle software at its own. And this is the fact pattern we have to solve in the future, in my view only by a strict liability system and an appropriate way to back it up with a software insurance system that imposes rules on their contractors when assessing new software products on a particular product basis. MANFRED WEITZ

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