

# **Information Management through Law?**

## **A Perspective on Information Law Against the Background of Western Europe**

by

Dr. Herbert Burkert

Senior Researcher,  
German National Research Centre for Information Technology, St. Augustin,  
Germany;

Assistant Professor for Information and Communication Law, St. Gallen,  
Switzerland;

Chairman, Legal Advisory Board, European Commission DG XIII E,  
Luxembourg.

### **Manuscript**

Published in: Zhong, Yixin; Geng, Jian (eds.): Proceedings of the 1998 2nd International Conference on Information Infrastructure. ICII 98 Beijing. Beijing 1998, 10-17.

The paper is in the sole personal responsibility of the author. I would like to thank, however, the many friends and colleagues who have helped me with their insight and comments, in particular Prof. Dr. R.J. Schweizer and Prof. Dr. J.N. Druey at the University of St. Gallen, Switzerland, and their "Information Law Evening Circle".

## **1. Some Remarks on Human Information Processing**

*Individual Information Processing  
a thought experiment*

In order to approach our subject let us start with a thought experiment. Let us assume for a moment there would be no information and communication technology and look at human information processing as such.

Human information processing as such has many limitations. Humans can e.g. perceive and process information only through the limitations of their biological channels of perception. Some of these limitations can be overcome through compensation; e.g. what we cannot hear we might be able to see.

### *Social Information Processing*

Some limitations are overcome through learning, i.e. what we do not know our parents may have experienced and passed on to us. This already indicates that one of the reasons of social institutions and organizations is the need to overcome limitations of information processing through social institutions, the family, peer groups, the community, political institutions.

### *Information Processing and Tools*

Still, social organizations as such do not suffice to overcome the limitations of information processing. In the course of history we have additionally developed tools of information processing to overcome some of our personal and some of our social limitations: sign language, scripture, tools to perform computing tasks.

Social institutions and tools, however, do still not suffice. Information processing in organizations e.g. might bring with it additional faults and limitations.

The Western European philosopher Francis Bacon describes them in his *Novum Organum* - 1620 - as the fallacy of the tribe (our limitations as human beings), the fallacy of the cave (the individual idiosyncrasies), the fallacy of the forum (the problems of communication and language) and the fallacy of the theater (the problems caused by habits of thinking).

Organizations tend to develop additional rules and methods to guard themselves against limitations of information processing. The science community e.g. is such a social institution that has developed the scientific method in order to at least minimize the risks associated with the limitations of human information processing.

We have thus social organizations, tools and methods that help us against fallacies. The way to handle these tools and methods in social organizations is called “information management” in the context of this paper.

### *Information Processing and Information and Communication Technology*

Information and communication technology is perhaps the most powerful tool we have developed so far to help us in overcoming the fallacies of information processing by individuals and social institutions. This tool helps us to overcome the limitations set by quantity, complexity, and space. This tool, however, as it has been shown in various assessments and as we know from personal, often painful experience, brings with it other limitations. Some of these limitations are what may be called engineering limitations, i.e. the information processing machines we use may have construction faults. Other problems may

be caused by mere inattention or malicious intent when handling these machines. These sort of limitations do not differ much from problems that might be caused by any machine and its usage and law can address them as it addresses faults caused by other machines: There can be civil law rules of liability and insurance that spreads the risks caused by machines; there is criminal law to counter negligence and malicious intent.

*engineering faults*

There is, however, another type of limitations that is specific to information and communication technology: We carry the limitations of human information processing into the usage of ICT, into the algorithms of programs, into the way we apply these machines to our social tasks. Sometimes we do that because we think that merely because we use information and communication technology we cannot go wrong.

We might e.g. think that a complex calculation exercised by a computer simply cannot be wrong, but we may have made a small mistake when entering the numbers. And we then may base our further calculations on this wrong computation.

*conceptual faults*

There may, however, be other mistakes we may make which are mistakes that can be called “conceptual” mistakes: We have a model of the real world, we simulate or compute the model with the help of the machine, and we then transfer the results back to the real world again; simulation or computation may be correct, but we may have the wrong model. Because of the wide use of ICT, because of its application in areas where we deal with valuable assets, e.g. with money as in banks, such a wrong model might cause heavy damages. We therefore need to pay specific attention to the methodological rules when using information and communication technology.

These methodological rules have a common basis that demands attention: We put our knowledge into a model of the real world, it is this model which we put in the machine and it is according to this model that our perceptions are being processed. The model is not the real world, the real world is always at least one degree more complex than our models, and the difference may be crucial.

## **2. Rules of Information Management**

From these experiences we derive rules of information management:

*correctness*

The most basic rule is, of course, that information should be correct. With regard to factual information we have developed some techniques - e.g. through scientific method - to ensure correctness. Things become more difficult when we enter a data area that demands a value judgment.

*timeliness*

Information must be up-to-date. One should only work with the most timely information to achieve useful results. Procedures have to be established to ensure this timeliness. The limits of time e.g. should be made clear; data collections should have time stamps to show when they had last been updated.

*context*

While those are rules that apply to all sorts of information processing, there is a rule of particular importance to information and communication technology: We have to respect the specific context of information. This is a rule that is often forgotten when working with information and communication technology because the data we have derived from our information processing in the process of model building always loses some of its context, and just this particular element might be decisive.

In a company e.g. there were specific procedures in a large office: Each employee had a chipcard and he or she had to use the chip card to enter or leave the office. This information was recorded for security purposes and all employees had agreed to this procedure because they were handling valuable material. After a month the security officer looked into the record and realized that everything was quite normal except the data relating to one particular employee who had entered and left the office very often. In the next month the record showed the same anomaly. So they talked to the employee. The employee said he had not entered and left more often than other employees had. So what had happened? This particular employee had his desk next to the door. Very often employees who had to briefly leave the office but had left their card on their desk asked that employee whether they could quickly borrow his card. And since he had wanted to be a helpful colleague he had borrowed them his card. Since that had happened quite often he finally left his card on his desk and so his colleagues just picked it up when they had to leave the room.

Obviously the employees had not strictly been following the rules and a conflict occurred between the practicality and the strictness of the rule. But the result was in any case a wrong picture of the true situation since that model did not sufficiently take into account other factors like the design of the room and the need for practicality.

*comparison at the source*

This little example shows us also the validity of another information management rule: There have to be procedures to ensure that the model is at least occasionally - or better at regular intervals - checked against reality. This check is best performed - unless there are other circumstances that advise against this - at the source, as in our example the particular employee had been asked to explain.

*economical use*

Other rules are more related to the economical use of information processing: Information should be collected as sparingly as possible. This is a rule that seems to be difficult to understand: New developments in information and communication technology make it less and less costly to store and process a particular item of information. So why should one be so restrictive? Also it seems to be better to have more information than necessary rather than too little. Doctors e.g. may collect a lot of information even if not all of this information is relevant for the diagnosis or the therapy. They might argue e.g. it is better to have the blood group of the patient although this might not be necessary at the moment. But one day the same patient might come in an emergency and then this information will turn out to be useful to have. However, to store information as you would store crops for the time you might need it, is problematic if e.g. you forget some essential you would not forget about crops: time. And information may become useless faster than crop. You might not only act against the timelines of information but you may also act against the rule of context limitation because the context may have changed since you last collected that data. Or you might break the rule of verification: A doctor e.g. - even if he has the blood group of his patient already on record - should always - as far as possible - re-check that blood group before an operation, not because the blood group may have changed but because a mistake might have been made in the first instance.

### **3. The Role of Information Law**

We have looked at deficiencies of human information processing on the individual and social level. We have shown that using the tool of information and communication technology helps us to overcome some of these limitations but might aggravate others and create new ones. We have pointed to some rules of information processing which we have created to limit these deficiencies. So why did these societies I am reporting on feel it necessary to transpose at least some of these rules into Information Law of Information and Communication Law?

## 1                   **Types of Information Law**

At this stage I will leave aside those types of information and communication laws which are designed to create and maintain information and communication *markets*. This type of law is maintained to induce competition and that in the process of competition practices are reduced that might endanger this competition. These laws also address those services which, it is felt, would not be provided by the market or where the market might not be efficiently providing them like certain public (universal) services. We find these laws in the area of telecommunications but also in some areas of mass communication.

I will also leave aside those types of information law which address the marketability of information technology products such as copyright law.

I will concentrate on those laws which seek to implement the information handling standards which we have described above and which I would call for the purpose of this paper information handling Laws.

## 2                   **The Role of Law**

Observing the functioning of the legal systems in Western Europe (and some of these observations may or may not apply to same degree to other legal systems) one comes across the following reasons for preferring information *law* to information management *rules*.

*symbolic rule*

Having laws instead of merely intra- or interorganizational rules symbolizes the importance society attaches to information processing and its technology.

*more input*

Having laws instead of just rules requires that a particular rule making process is ensured - law making - which differs from mere rule making processes in so far as this process usually involves more sources of experience and interests and reduces the risk that important issues are overlooked.

*stability*

Laws rather than rules provide, at least for a given time (laws can also be changed, of course), a stable environment which in turn provides orientation for individuals and organizations and allows them to make mid- and long term decisions for their information systems.

*connection with the legal system*

In the form of laws information handling rules can more easily be connected to the remainder of the legal system. E.g.: If there are laws

about civil liability and damages information law can connect with them and describe that liability will occur when these information handling laws are not followed.

It should be added at this stage that we do have discussions as to whether regulating through “law” is always the best possible way. Some say that law is not fast enough to react to technological change. Others have the opinion that laws should be minimized and that they should only set a framework for rule making through e.g. industry groups themselves.

### **3 Information Handling laws in Western Europe**

Against this background over the past twenty years basically three types of information handling laws have developed in Western Europe: Laws concerning the handling of personal information, general laws concerning the handling of information in public authorities, and laws concerning the handling of information in society as such.

#### *Laws concerning the handling of personal information*

These types of law, often referred to as privacy laws or data protection laws seek to introduce information handling rules particularly to information relating to persons and groups of persons. This is driven by the need to ensure that the basic principles of information processing which we have described above are applied. So we find in all of these laws principles on data quality, on economical use of information, on the specification of the purpose of information to ensure context and on the secure handling of information.

The laws then establish sets of procedure and organizational rules that seek to guarantee that these principles are being followed.

The special attention to *personal* data stems from the role that the person plays in the value system of Western Europe and the consequential need to address this value.

#### *General laws concerning the handling of information in public authorities*

The underlying idea of this type of legislation in Western Europe is that basically public authorities should handle all information (not just personal information) as a valuable asset and that procedures should be established which resemble the way in which public authorities should e.g. handle money. This includes information specific rules set up for administrative procedures. Particular emphasis is put on procedures which make it possible to follow information flows as one would follow money flows through the administration. In the area of environmental information e.g. information repertoires have to be kept which allow scrutinizing the information deposits not only within but

also from the outside of the body that is keeping the information, providing at the same time safeguards for state and business interests.

*Laws concerning the handling of information in society as such*

Such laws we find mostly in the area of criminal law: These laws should ensure that not only the two types of law previously described are being followed but also that in particular information and communication technology is not being used as a new tool in more traditional types of crimes like fraud and theft.

#### **4. Final Observation**

Information law is not a solution to all the problems of the use of information and communication technology. Even if it has helped in some cases, it is felt that you should not do as the farmer who had once observed that a hare ran against a tree stump, got unconscious and only needed to be picked up, and who consequently continued to sit by this tree stump to wait for other hares running against it instead of toiling the fields. There is e.g. the problem of adequately drafting information and communication technology law that has to be done in a way that addresses the technology but not in a way so that you have to change the law with every change of the technology. But it is felt in Western Europe that these laws have at least contributed to educate and to create information handling consciousness in the society./--