# LEGAL VALUE AND ELECTRONIC RECORDS.
## Nature and definition of the electronic record, technological and functional requirements for its creation

### by Maria Guercio

*The nature ofthe electronic record*

In a paper aimed at identifying the requirements which consents the creation of electronic records legally recognized by the juridical system, the problem of defining the "record" and, specifically, the "electronic record" and its essential nature unquestionably constitutes not only the first step but atso the basic theoreticaí premi se upon which the entire system is based - even if thís is not a sufficient condition from the legal point of view - and which should, as such, be able to draw upon the Consolidated bedrock of archival science.

In actual fact, however, the task of identifying a common terminology and shared set of concepts has proved far more taxing than expected despite the existence of tools both known and used for quite some time in the international context, including the *Dictionary of Archival Terminology* published by the International Council on Archives (ICA). Paramount among the many causes from which this difficulty stems is the fact that the technological development now under way is leading to radical changes also in the área of record creation and management. The enormous growth of tools of digital communication is rapidly transforming traditional records into electronic formats in an increasingly large number of organizations using common systems and products that are integrated at both national and international levei. Such advances are already forcing those operating

in the sector to apply greater stringency in formulating a set of common principies anel general solutions capable of going beyond national borders and the diversity of national legal systems.

The international archival community has hitherto succeeded - albeit in anything but simple and obvious fashion - in developing a common foundation of principies, concepts and methods which maintains a low levei of sharing and hence allows a high degree of adaptability and flexibility within the sphere of each national tradition. The standardization projeets and programmes carried out so far have, however, proved insufficient to meet the needs of the new information society, especially if the challenge concerns the capability of providing principies, methods and tools for the legai definition of the electronic records within different juridical systems. The process of standardization induced by the new technologies means in fact that everyone is obliged to deal with the same technological tools, the same logic and the same problems, starting with an inexorable process of decentralization, a proliferation of electronic records in different formats, a progressive and alarming absence of control in internai organization, and the ever expanding integration of telecommunications and computing. Pragmatic responses have been developed on more or less ali fronts, but with results of somewhat limited scope. No satisfactory solution has thus emerged so far to the basic problems, not even at the conceptual and methodological levei and especially as regards the types and structure of electronic records and the consequent Identification of the functional requirements of an electronic recordkeeping system. The basic technological solution is considered the digital signature, because of its

principies and concepts that can be applied in different situations and various contexts. In fact, information technofogy is bringing us closer and closer to the 'global village' where communication media overcome cultural and juridical differences, and, because of its nature, is cultivating universal solutions"[1].

The other most significant and best known initiatives undertaken in this field also confirm the importance of the theoretical and methodological issues, albeit without always consistently drawing ali the necessary consequences. The objectives of the research project developed by the University of Pittsburgh focus on two requisites which cannot be neglected in systems for the creation and management of electronic records and which require common theoretical formulation: "First, the assurance that such records satisfy the requirements for evidence and second, methods by which records can be made available over time without constant re-presentation and migration of their intellectual contents"[2].

The probative value of electronic records can be guaranteed together with methods to preserve their intellectual content over time only if we have a clear formulation of the archival nature of the records in question.

The ICA Committee on Electronic Records has also deemed it necessary that the *Guide for Managing Electronic Records from an Archival Perspective* should include a whole chapter devoted to the definition of certain key concepts: the concepts of record and electronic recordkeeping, of archival function, of record creation, appraisal, preservation and access/use. The

[1] **Luciana Duranti and Terry Eastwood,** *Protecting Electronic Evidence: A Progress Report on a Research Study and its Methodology,* in "Archivi e compute^', 1995, 3, p. 214.

capability of freezing the electronic message and ali the other connected embodied elements. This is not enough from the archival point of view, because the aim of the archival creation and keeping of records is not only the content of a message and its structure. The main question is the Identification and maintainance of the documentary and administrative relationships. Technical devices are necessary, but they should be associated with methods able of relating the records with reference to the connected activity and preserving on time ali these elements in the original format they had at the phase of the records creation.

The greater the impact of technological advance and the greater the complexity and speed of innovation in the area of new products, the greater the urgency this need assumes. While the goal of permanently conserving electronic records may seem something of a pipe-dream today, it does constitute a costly commitment and one which cannot be fulfilled without the constant exchange of views and information coupled with a multi-disciplinary approach.

This objective calls primarily for efforts of a theoretical nature beginning necessarily with the concept of the record, its nature and the identification of its component parts. As pointed out by UBC researchers Luciana Duranti and Terry Eastwood \n the first report published in the review "Archivi e computer", The fundamental assumption of this project is that the identification of the criteria, techniques, and methods needed to solve the problems posed by the use of electronic information systems for carrying out the ordinary business of individuais and organizations cannot derive from purely pragmatic and ad hoc decisions, but must be rooted in

terms "reliabifity" and "authenticity" have afso come in for discussion and evaluation. The results of the similar effòrts made by the Australian Archives in the field of definition *(Keeping Electronic Records. Policy for Electronic Recordkeeping in the Commonwealth Government,* Exposure Draft Version 2, September 1995) (argely coincide with the findings of David Bearman and the University of Pittsburgh project, especially as regards the concepts of record and recordkeeping system.

Is it necessary - and above ali possible - to achieve a substantial convergence of views within the international community as regards the concepts in question? As things now stand, fulf convergence - even íf cleariy necessary for an effective presence of the archivists in this area - does not appear to have been reached at the international levei, despite the fact that the views put forward by the various groups of researchers are by no means incompàtible. There is no common glossary and many issues that might appear to be of a merely preliminary nature - but actually constitute the basis for any future progress in the field - are anything but settled. Personally, I think that the study carried out by the UBC group of researchers has produced interesting results preciseiy in the area of conceptual analysis, but also in defming a detailed list of the functional requirements a recordkeeping system must meet to create reliable and maintain authentic electronic records and has already won widespread agreement within the international community. However, this is only a good starting point: more research should be done, more discussion should take place and more

[2] David Bearman, *Virtual Archives,* Third Subsidiary Paper within the Second Plenary Session, in *XIU International Congress on Archives. Beijing 1996,* p. 1.

effort for a common international agreement should be made if the archivists want to play a role in this crucial area.

Prior to any detailed examination of the most important concepts, ít will, however, be as well to make a number of observations on what is happening in Europe at the administrative levei with reference to the records management within a digital environment.

*The European administrative context ànd the record's functions*

The ease of communicatíng and the apparent simplicity of safeguarding information has already led - especially in the most technologically advanced and complex organizations - to information jams building up within the system often in the absence of essential criteria serving to anaiyse the nature and quality of the information created and stored. The culture and knowíedge of archival documents have also been thrown into disarray as a result of the radical changes imposed on creators by organizational mechanisms. While the disappearance of hierarchical structures has led to a greater degree of flexibility and motivation as well as increased speed and efficiency, it has also meant a loss of administrative points of reference as well as the need for highly simplified internai procedures that are not necessarily capable of meeting the requirements of documentation. This is a general phenomenon, albeit with different degrees of development stemming from differences in national archival traditions and legal systems. In the new organizational context, the archival document is often confused with other products of the creator's information system, even allowing for the digital nature of the médium, with serious

repercussion in terms both of the evidentiary quality of the documentation produced and preserved and of the efficiency of the information system as a whole. This confirms the need for a clear-cut answer to the original question "What is a record and what is its function in the bureaucratic context?"

First and forèmost, it should be pointed out that the record is not any kind of recorded information, but the recorded representation of acts, produced according to specific rules - the rufes established at different degrees by the legal system in question - by a creator (a jurídica) or a physicaf person) in the exercise of its functions[3]. This definition, whose validity has been recognized for centuries in the field of diplomatics[4], i.e. the science that studies the document with regard to its authenticity, pinpoints the fundamental elements which identify the archival document and distinguish it from a series of documents of different nature and functions, e.g. documents which have an excfusively informational function and are produced for that purpose and not in connection with any practical activity of legal significance (books, brochures, etc.)

Given its representàtional and probative status in legal transactions, the record thus performs a twofold function:

• as legally valid proof of rights

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[3] This definition is drawn from Cesare Paoli, *Diplomática,* Firenze 1942, p. 18.

[4] Paola Carucci, *// documento contemporâneo. Diplomática e criteri di edizione,* Roma 1987, should be acknowledged as the first to have fully and consistently recognized the usefulness of the conceptual and methodological tools of mediaeval diplomatics also in the study of contemporary records. This important insight has been taken up with great conviction and originality by Luciana Duranti and expanded also to cover the new sector of electronic records. See especially the papers published in the review "Archivaria" from 1989 on. In particular, the above-mentioned study conducted by Luciana Duranti at the University of British Columbia on the tools required to preserve the integrity of electronic records highlights the importance of the science of diplomatics in the sector of electronic records by virtue of its nature as a discipline which studies the record as an entity, defines its nature and constitutive elements, and pinpoints its general characteristics.

- as evidence of interests and relations, and hence support for future decision-making.

In any jurídica! system, the record must be recorded on a médium and formulated - as pointed out above - in accordance with the requirements imposed by the legal system. Examination of the record from this complex viewpoint highlights the inadequacy of certain broadly accepted definitions that reduce it to a combination of content, structure and context, in that these three aspects cannot be simplified and isolated ar)d appear rather to be related to the concept of form, i.e. to the set of the record's constitutive elements. If the content is the act represented, it does not exist in the record as such but only insofar as it manifests itself through the specific articulation of ali the elements of the record itself, both physical and intellectual (or intrinsic and extrinsic, to use the terminology of diplomatics). The enacting text or purview of the specific act of which the archival document constitutes the recorded representation is only one of the elements of the logical structure.

- The above-mentioned functions performed by the record - which can be summarized in the aim of representing (obviously in different ways) an act arising in the course of a practical transaction - also determine its fundamentai characteristics and hence its nature and its relations. Records, as by-products of activities, are not in fect individual entities but component parts of a whole connected by a bond which archival science

defines as "necessary and determined" in that it stems from a common purpose and a single origin,[5]

Specific tools are required in both the traditional and the electronic environment to ensure an orderly accumulation both at the moment of creation and with a view to conservation. These include the following:

- the classification scheme establishing the framework of relations between records and their accumulation with respect to the transaction in question;

- the assignment to a particular archival unit (a file, a dossier, that is iat the same time a fogical and a physical entity) and the order of the records within the unit;

- the registration records forthose specific series of archival units received and sent which require such procedures in order to guarantee their probative status;

- the arrangement of records in homogeneous groups in terms of function and transaction or form (type of record) during the concrete process of forming the archives and above ali upon the transition of records from active to semi-active status.

Despite their extremely concise nature[6], the foregoing remarks give an idea of just how complex the function and structure of the record are and make it

[5] G. Cencetti, *77 fondamento teórico delia dottrina archivistica,* in *Saitti archivistici,* Roma 1970, pp. 38-46.
[6] This paper does not address the problem of the function of the record with respect to the act, which may give ri se to a series of different cases. Many writers identify four fundamental cases: a. the record constitutes the form of the act (constitutive record), so that record and act coincide and one constitutes the prerequisite for the existence of the other; b. the record endows the act with certainty (probative record) and serves the purpose ofphotographing and crystallising the already formed act, as in the case

clear why any legislation and procedure for the creation and the preservation of electronic records require consistent identification of the object in question: the individual record in terms of its constitutive elements as well as the group of records as a whole and their reciprocai relations. In an electronic context, it is in any case not only necessary to maintain the classification code for each record - which also comes to form the only element capable of establishing the correct position of the record with respect to the corpus to which it belongs and of guaranteeing the original order of the set of records - but also indispensable to conserve the data regarding the classification system as a whole, incíuding the notes describing the nature of each levei and the list of ali the items forming part of the system, incíuding those in which no records are accumulated.

In an electronic recordkeeping system, the fundamentai requirements for the creation of the records for their integrity preservation include in particular the identification and the preservation over time not only of the documentary entities but also of ali the elements making it possible to identify and ciassify the relations between records (i.e. the concrete way in which the records accumulate) and the links with the specific administrative structure of which they form part. As Giorgio Cencetti, a leading Italian archivist, points out, records do not iead an autonomous life but rather find their life and meaning precisely in the concept of relationship[7].

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of minutes; c. the record performs the function of communication within certain proceedings; d. the record performs the function of communication for the purposes of providing information (the record is to be made public). Cf. *Documentazione costituzionale,* ed. Giuliano Amato, in "Enciclopédia dei diritto", X m, pp 599-606.

[7] G. Cencetti, *Inventario bibliográfico e inventario archivistico,* in *Scritii archivistica* cit. p. 68.

Therefore, with respect to the foregoing remarks, any electronic recordkeeping system should be abfe:

- to establish how a record is identified in an electronic environment and is appropriately segregated from ali other types of information in electronic systems;

- to define the specific procedures

  - for creating electronic records which guarantee their creators to be accountable through them

  - for maintaining the electronic records integrally, that is as documentary entities with their original administrative and documentary relationships

- "to articulate the administrative, procedural and technicaf methods for the implementation of those requirements; and

\* to assess those methods against different administrative, juridical, cultural and disciplinary points of view.[8]

*The legal vaíue of the electronic records  and  the juridical system: the different European perspectives*

There are two concepts that require to be better understood and discussed first among the archival communíty, secondly with reference to the general question of the legal validity of the electronic records: the concepts of reliability and authenticity of the records. The main attempt of their definition has been done by the UBC, research from an international point of view, even if under the ínfluence of the Common Law concepts. For this reason they require further investigation, because they may give rise to some doubt in the case of Civil Law systems which are based on the absolute value of the record when it is an original and specifically in the case of public records[9] This analysis is, however, of unquestionable utility both in countries with a Common Law system and in the broader international context, and in any case corresponds to a general need to  define the essential nature of the records produced by any system, mainly in a digital form.

According to the UBC researchers, the reliability refers "to the authority and trustworthiness of records as proof and  memory of the activity of which they

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[8] **Luciana Duranti and Terry Eastwood,** *ProtectingElectronic Evidence ..cit.,* **p. 215.**
[9] **Under Italian law, for example, a record that is complete in form and hence valid must be accepted as reliable. It cannot be discussed and evaluated even in legal proceedings. As Alessandro Pratesi states in his manual of diplomatics, "The form of drafting must obey precise rules – which may vary according to time, place, persons and content – such as to endow the record with the necessary credibility or probative capacity that cannot be denied until such time as forgery is proven" (Alessandro Pratesi,** *Genesi e forme dei documento medievale,* **Napoli 1985, p. 8).**

constitute the natural by-product, that is, to their ability to stand for the facts they are about. Reliability is bestowed on a record by its form and procedure of creation, and by the trustworthiness of the persons contributing to its creation. The amount of control exercised on its form, creation procedure, and author's competence provides the degree of reliability of a record"[10].

In the case of Civil Law systems the requirements for the records reliabillity are previously determined by the juridical system itself as a series of general and special rules with different degrees of control: for example the Italian regulation for the recordkeeping system in the public sector is a national law which includes the obligation of the registry systems and the classification plans for ali the public organizations, and it is now updated with reference to the electronic records and to the electronic recordkeeping systems. In the systems of Common Law the capability and responsibifity for the records reliability are mainly left to the creators themselves. The consequence is a different way of considering the record and its authority in the course of the business and, of course, in the case of the judicial context:

- for a juridical system based on the Civil Law a record complete in its form (that is created according to a specific administrative procedure defmed by the legal system) is valid until it has been proved false in the judicial context

- for a juridical system based on the Common Law, in the case of a judicial controversy, a record will be evaluated by the judge who has the authority to verify also the efficiency of the recordkeeping system with reference to the record reliability.

L Duranti and T.Eastwood, *ProtectingElectronic Evidence...cit.*, p. 215.

The concept of authenticity - which regards guarantees of conservation in time and space, and hence also the moment of transmission, with respect both to forgery of the original and to reproduction procedures - is also unquestionably as central, if not more so, given the fact that any electronic record earmarked for conservation is involved in a series of copying and/or migratton operations and hence exposed to considerable risk of aiteration. Anybody agrees today with the point that the authenticity of electronic records can be ensured only in the form of authentic copies, i.e. records whose conservation is made possible through an uninterrupted sequence of reproduction and takes place in accordance with rigorously controlled procedures guaranteeing the definite identification of the author or provenance and conformity to the original. To this end, it is therefore again necessary to preserve ali the tools that identify and establish the relations existing between the records, i.e. the archival bonds from which, as pointed out above, the records draw their significance.

*A brief concfusion*

In conclusion, thefoliowing observations should be proposed:

- It is the form of the document (i.e. its constitutive elements) and the archival bond that must be preserved, regardless of format and médium.

- Authenticity over time must be guaranteed both at the moment of the documenfs transmission and use and at ali subsequent phases of conservation.

The funclional requirements that a recordkeeping system must fulfil aiso in the case of electronic records can be identified only if these prerequisites are borne clearly in mind.

Such requirements do not derive their legitimacy from externai sources, as the legal system, but from the very nature of the records. It follows that - in addition to a series of specifications of strictly technological nature common to ali types of electronic documents - the system designed to preserve electronic records must provide for a series of specific requirements which must be identified by archivists and records managers. The following list includes just some of the elements to consíder:

- a unique identifier for each record (the registration number if applicable)
- the connection of each record to its enclosures
- the identification of the links between the records (the classification code, incíuding also the identification of the basic logical aggregation of the records in the form of the archiyal unit)
- the identification of the media, the format, the physical location, the network, HW and SWplatforms
- the definition of the preservation term
- the preservation of the retrieval system connected to the creation system
- the identification of criteria for the transfer of semiactive and inactive records

- the identification of users and the definition of an access system

- the definition of an audit trail system and a safety program

- the definition of criteria to guarantee the records' integrity in the migration process

- in the case of electronic records ali these elements should be incíuded in a record profile which establishes a permanent link between each record within the recordkeeping system and its archival information

- The nature and the components of the record profile are main part of an electronic recordkeeping system

- Ali the records profiles must be maintained and transferred to be managed by the archival program

To conclude, the recordkeeping system should be always capable of identifying the documents of any format and médium unambiguously as records within the system and of linking the documents identified with the functional organization and the documentary structure of the creating agency, i.e. of classifying them and thus assigning them to a set or other archival unit as well as registering them where necessary.

Other system functions can also be provided for and implemented - e.g. a series of controlled business procedures as foreseen by the recent italian legislation on the electronic recordkeeping system in the public sector - so as to ensure the creation of documents that are not only complete and valid in the form laid down by the legal system and by internai regulations, but also controlled in their relationships with the creator's activity, to avoid redundancy, to ratíonalize and simplify the decision processes and the

related business procedures, to provide an easy access to the citízens, etc. This is a new sector for the archivists investigation, more and more relevant. It requires new skifls, as the capability of cooperating in the electronic records system desigr  More áttentíon and reflection are required. It couid be the subject of another report and - thas time - for a visit of Portugal, long enough to appreciate your beautiful country.