

The Concept of Record in the Digital World: The View of the InterPARES Project

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InterPARES Project

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InterPARES 1: Research Goal

To develop the theoretical and methodological knowledge essential to the permanent preservation of authentic records generated in databases and document management systems, and, on the basis of this knowledge, to formulate model policies, strategies and standards capable of ensuring that preservation.



InterPARES 2: Research Goal

To develop the theoretical and methodological knowledge essential to ensuring that the portion of society's recorded memory digitally produced in dynamic, experiential and interactive systems in the course of artistic, scientific and e-government activities can be created in accurate and reliable form and maintained and preserved in authentic form, both in the long and the short term, for the use of those who created it and of society at large, regardless of digital technology obsolescence and media fragility.



Record

Any document created (i.e., made or received and set aside for further action or reference) by a physical or juridical person in the course of a practical activity as an instrument and by-product of it.



Records versus data

- All records are documents
- Document = recorded information
- Information = aggregation of data intended for communication over time or space
- Data = the smallest indivisible meaningful fact



Electronic Record

A record created (i.e., made or received and set aside for action or reference) in electronic form



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Identifiable Characteristics of an Electronic Record

- Fixed form (i.e. its binary content is stored so that it remains complete and unaltered, and its message can be rendered with the same documentary form it had when first set aside)
- Unchangeable content
- Explicit linkages to other records within or outside the digital system through a classification code or other unique identifier
- Identifiable administrative context
- Involvement of three persons: an author, an addressee, and a writer
- Participation in or support of an action either procedurally or as part of the decision making process



Hypotheses

- Diplomatic hypothesis that, regardless of differences in provenance, date or presentation, all records are similar enough to make it possible to conceive of one typical, ideal documentary form containing all possible elements of a record
- InterPARES hypothesis that, while they may manifest themselves in different ways, the same elements that are present in traditional records exist in electronic records and that all records share the same attributes, either explicitly or implicitly.



Template for Analysis

A decomposition of an electronic record into its constituent elements which defines each element, explains its purpose, and indicates whether and to what extent that element is instrumental in verifying the record's authenticity



Parts of a Record

- DOCUMENTARY FORM
 - intrinsic elements
 - extrinsic elements
- ANNOTATIONS
- CONTEXT
- MEDIUM



Intrinsic Elements

- elements that convey aspects of the record's juridical and administrative context
- elements that communicate the action itself
- elements that convey aspects of the record's documentary context and its means of validation



Extrinsic Elements

- presentation features
- electronic signatures
- electronic seals
- digital time stamp of a trusted third party
- digital watermarks
- other special signs



Annotations

- Additions made to the record after its creation as part of the execution phase of an administrative procedure.
- Additions to the record that reflect subsequent actions taken after the creation of the record *to handle the activity or the matter* in which the record participates.
- Additions to the record that reflect subsequent actions taken after the creation of the record *to handle the record for records management purposes*.



Contexts

- Juridical-Administrative
- Provenancial
- Procedural
- Documentary
- Technological



Record Elements, Attributes, Digital Components

- A record element is a constituent part of the record's documentary form and, as seen earlier, may be either extrinsic, like a seal, or intrinsic, like the salutation
- A record attribute is a defining characteristic of each given record (i.e. name of author) or of a record element in it (i.e. legend on a seal)
- A record component is a digital object that may contain all or part of a record, and/or the related metadata, or more than one record, and that requires specific methods for preservation.



Other Peculiarities

- The relation between a record and a file can be one-to-one, one-to-many, many-to-one, or many to many, so a file does not necessarily equal a record
- The same presentation of a record can be created by a variety of digital presentations and vice-versa, from one digital presentation a variety of record presentations can derive, so fixed form does not imply an immutable bit stream
- It is possible to change the way in which a record is contained in a file without changing the record, so form and record do not necessarily coincide



Experiential, Interactive and Dynamic Records

Experiential records are objects the essence of which goes beyond the bits that constitute the object to incorporate the behavior of the rendering system, or at least the interaction between the object and the rendering system.

Interactive records are records made and maintained in interactive systems, where each user's entry causes a response from or an action by the system

Dynamic records are documents whose content is dependent upon data that vary continuously and are held in several databases and spreadsheets



Questions

- Is it possible to have a record in fluid form and with undetermined boundaries?
- If not, should an entity with fixed form be generated for the purpose of making a record to be kept in a trusted recordkeeping system and perhaps preserved over the long term?
- If yes, who should make it?
- On the basis of which criteria?
- When in the entity's lifecycle?



Alternatives

- To trade stability of content and fixity of form with the ability to track changes. Record=last instantiation+log of changes+ metadata
- To think of the record as existing in two modes: record in becoming when the object is accessed to add information to it; record when the object is accessed for use. Record=each instantiation accessed for use+metadata



Issues

The issues are related to:

- the maintenance of each digital object, be it larger, smaller or equal to a record, in a way that its accuracy/reliability and authenticity can be ensured
- the maintenance of the relationships among analogue and digital entities, and of the ability of the various digital objects to interact with each other, with or without human or technological mediation, both within a record and between records, in precisely the same way in which they were meant to interact when generated
- the identification of the boundaries of the entity record.



InterPARES Context

- It is concerned with permanent preservation, hence, the entity identified as a record must be preservable
- Has determined that preservation is only possible through production of authentic copies, hence, the entity identified as a record must reach stability
- Has stated that the chain of preservation begins at creation, hence, the entity identified as a record at creation must be the same that we preserve



Key distinction

- Copies made by the creator in the course of and for the purposes of its business are **records of the creator**
- Copies made by the preserver in the course and for the purposes of archival functions are **authentic copies of the records of the creator**

Hence:

Any alteration of the form of the record made by the creator to be able to keep the record for future action or reference is a record of the creator



Case Studies in the Arts

- The work is the performance
- The score is a set of instructions
- Other components: computer codes, patches, a synthesiser when used, and the interaction between the performer(s) and all of the above

Hence, we can either

- fix the components in a definitive form with one final act of interpretation and representation, or
- Generate a description of all these components and their interaction that allows to re-create the work



Rhizome ArtBase

- Connected art object: it comprises the description of the work and its components, a thumbnail of the work, keywords and metadata, a link to the URL of the work, the biography of the artist, and his/her certification that this aggregate of parts corresponds to the work and constitutes an adequate representation of it
- Cloned art object: it includes, in addition, an authentic copy of the work preserved in the server of the project



Outcome

- It captures the essence of the work
- The author/creator is an active participant in preservation
- Authenticity ensured by the involvement of the author/creator in the creation of a surrogate reflecting his intentions
- The record nature ensured by the fact that the author/creator creates the surrogate in the course of his business and for the purposes of it



Case Studies in E-government

An interactive record that

- is spread across several interacting technologies
- has no clear boundaries, and changes continuously on the basis of the input of the user (either the government officer or the citizen) and/or of the reaction of the system to such input
- rarely corresponds to one action and more often includes the whole interaction between a government office and a citizen with respect to one matter (i.e., what used to be a dossier).



What to Do

Identify:

- the boundaries of the digital entity constituting the record which, once made or received, and repeatedly set aside in different instantiations, is to be kept for future action or reference in a trusted recordkeeping system,
- the essence of such entity, i.e., its constituent parts and digital components to be kept stable as content and fixed as form and linked among themselves,
- its attributes to be manifested in metadata permanently attached to the record
- the necessary accompanying documentation of what is not fully preservable, that is, interactivity, connectivity, and functionality

Assemble the stabilized essence of the record, its metadata and system documentation and treat this entity as the record.



Imbreviaturae

- Data on the transaction type, the names of the parties, the date, the transacted property or matter, and any other specific to that transaction
- Registered, bound and indexed
- Related to a formularium
- Retrieved to create the record when needed (original)
- Kept by a trusted custodian



E-government Record

At the end of the transaction:

- Separate data from form and creating environment
- Stabilize data and original metadata
- Describe original form and functionality
- Link all above together

Upon request, re-create the record (copy in the form of original, but still the creator's record)

Trusted custodian is essential



What is the Record?

- While the business procedure is active, the interactive digital entity constitutes the overall record of the transactions between government and citizen
- Once the business procedure is concluded, the final record of the transaction will consist of the data contained in the last instantiation of the interactive entity and its metadata, linked to an exemplary of its form and a description of the record functionality and system documentation, that would already be maintained in the recordkeeping system to which such record will be transferred



A GIS Record: VanMAP

- Treated by the creator as a record
- Linked to the other records of each business process in which it participates
- It is the by-product and residue of the transaction of affairs
- Its data do not exist anywhere else in a similar aggregation
- It exhibits the qualities of all records: naturalness, impartiality, interrelationship, authenticity, and uniqueness in context



VanMap: from a Potential Record to a Record

- develop a detailed description of each business process in which VanMap is involved and of the way in which VanMap is used in each of them, thereby revealing the relationship between the records of each business process and VanMap
- configure the system in such a way that every day, at the closing of business, a complete image of VanMap be preserved live and fully functional within it, with the related attributes attached as metadata
- Remove the historical stratification of daily images once a year and keep it as the finished, stable, fixed record of the year



Conclusions

- dynamic, interactive and experiential digital objects can only be potential records
- if the creator treats them as records, associates them with entities that are records, and do so in the course of activity and for its purposes, these objects only need a stable content and a fixed form to be finished records
- if the acquisition of stability and fixity occurs at the hand of the creator's trusted custodian (i.e. the records' officer) and for the creator's purposes, the results will be records in all respects

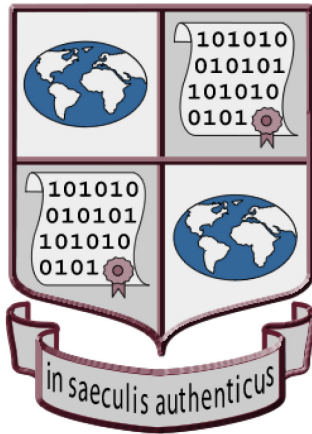


InterPARES Contribution

To establish the conceptual underpinning, the parameters, and the method of analysis that will determine the answer to the question of what entity corresponds in a known given environment to the archival definition of the record



InterPARES Web Site



www.interpares.org



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