

## **The Role of Authenticity in the Life Cycle of Digital Documents**

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### Abstract

The concept of authenticity has played a central role in the creation and management of records in archives and records management. The purpose of this paper, in addition to drawing attention to this issue, is to explore the concept of authenticity in its various ramifications dealing with digital records and documents, including archives, diplomatics, laws, and computer science. In addition, this paper also explores how the concept of authenticity has impact on each process of the life cycle model. At each stage, ensuring the authenticity of records is very significant, especially in digital environments. Some of research projects in progress present functional requirements in the life cycle processes of digital records and documents such as the InterPARES Project. The paper will conclude with implication for further development to understand and implement authenticity in the life cycle model as well as in the management of digital records and documents.

### Introduction: Why Authenticity?

Digital records became ubiquitous in individuals' and organizations' recordkeeping practices in the digital age. The growing use of digital information and records has significant effects on increasing organizations' performance and efficiency in many ways. The use of electronic records brought a great deal of changes and advantages to organizations' ability in business processes, transmission, communication, work environments, financial management, staff organizations, and decision-making. At the same time, these changes, however, have created unexpected problems in managing information, especially in digital formats. Frequent transmission and communication in digital formats exceed organizations' ability in managing those digital records so that it can make the accountability and authenticity of electronic records doubtful.

Authenticity has long been understood as a significant term in archives and

records management for a long time because newly created records are assumed to be all authentic and only authentic records are managed and preserved in archives. The assumption became fragile and weak due to the vulnerable nature of digital documents. In recent years, as digital records and information are prevalent in organizations, we as records managers need to emphasize the concept of authenticity in the management of digital documents and assess the concept to the use of digital records in the life cycle model.

The purposes of this paper are to pay attention to the concept of authenticity and relating issues and to examine the concept of authenticity in some professional fields where digital records and documents are dealt with, including archives, diplomatics, laws, and computer systems. This paper also explores whether the concept of authenticity has impact on the records' life cycle in records management.

### Meaning of Authenticity

The concept of authenticity has a long history of being defined and used from the Greek age. Its root stems from *authentikós*, which is composed of aut (root) and hentes (doer, actor) and ikós (-ic, adj.). The dictionary meaning of authenticity includes: original, primary, and at first hand; not false or copied, genuine, real, veritable; sharing the sense of actuality and lack of falsehood or misrepresentation; having the origin supported by unquestionable evidence, authenticated, verified, or entitled to acceptance or belief because of agreement with known facts or experience; reliable; trustworthy (*The Random House Unabridged Dictionary*, 1993). In archives and records management, authentic records are understood “as being what they purport to be -- reliable records that over time have not been altered, changed or otherwise corrupted.”

(Dollar, 1999). Authenticity warrants that the record is not changed or manipulated after it has been received or sent since it was created and transmitted to many parties over time. Luciana Duranti argues that “authenticity” in the archival sense refers to the maintenance of a record's reliability through its use, transmission, and preservation over time (1995). An old discipline diplomatics examines the genesis, forms, and transmission of archival documents, and of their relationship with the facts represented in them and with their creator, in order to identify, evaluate and communicate their true nature. Thus, diplomatic understanding of authenticity is that when a document is what it claims to be (Duranti, 1998). A document is "authentic" when it presents all the elements designed to present it. As a result, authenticity is an absolute judgment in archives that can be changed at any moment as a result of an action or migration on the record over time.

In contrast, in law, authenticity is understood as criteria for “legally admissible evidence.” In an area of law, evidence means anything that displays the truth of a fact or point in question and is used as judging criteria in the lawsuit. Therefore, the submitted evidence should be authentic and relevant to the argument. To do so, an attestation of that submitted evidence is also required. The legal community has considered electronic documents in relation to the reliability of the processes associated with their creation and security of records during data transmission and interchange. Along with the rapid growth of network, and Internet users, security issues became important as well. Recently, in the field of computer security and data security, the concept is used to indicate that processes will ensure that everything about a teleprocessing transaction is genuine and that the message has not been altered or corrupted in transmission. Computer scientists have developed several techniques and devices for security such as

encryption, digital signatures, watermarking, public keys, hashing techniques, steganography, digital watermarking, encryption, encapsulation, cryptography, etc.

The Life Cycle of Records Management.

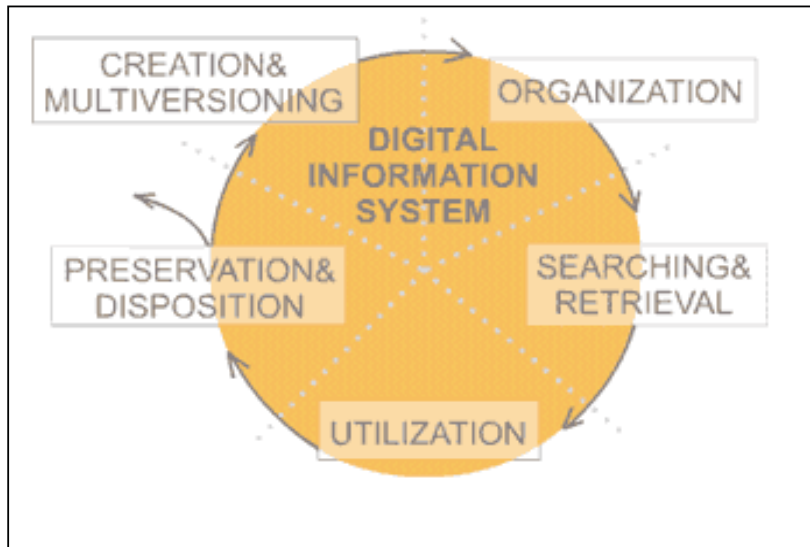


Figure 1. The Life Cycle of Objects in a Digital Information System (Gilliland-Swetland, 2000)

Considering records from the frequency of usage and value of records brought attention to the records life cycle model. The life cycle model originated from biology and was adopted as information life cycle in the field of information science. It consists of five stages such as creation/multiversioning, organization, searching/retrieval, utilization, and disposition/preservation as send in Figure 1. Records life cycle indicates the life span of a record as expressed in the five phases of creation, organization, searching/retrieval, utilization, maintenance, and final preservation/disposition. First, at the creation stage, records are produced in a wide variety of forms and formats using

technologies and equipment. At the organization stage, records are organized in a meaningful and systematic ways by adding cataloging or descriptive information to records and creating as secondary information. These records are searched or retrieved by users or librarians. At the utilization and distribution phase, records are distributed and transmitted to the person needs for its use. Records are commonly used in decision making, for documentation or reference, in answering inquiries or in satisfying legal requirements. As time passes, the use of records declines like most organizational asset and their value also tends to be declined and become useless and finally discarded by the frequency of usage. At the storage and maintenance phase, when a decision is made to keep the record for use at a later date, it must be housed in some type of storage device, and protected in the maintenance of records. After records are stored, a request is made to retrieve it from storage for use. During this phase, records are frequently referred to and remain active. At the disposition and retention phase, when records decline in value and retrieved records are no longer needed for use, records become inactive, and are then removed from active storage in office space, are destroyed, or transferred to an inactive storage facility for the duration of their retention life. The last phase in the record life cycle is disposition by destruction. When records contain permanent value, the records are preserved at a permanent storage place for a long-term period of time. The record life cycle is important in knowing the meaning and importance of each phase of the entire record life cycle. Records managers should be able to understand what is needed to manage all records.

When is Authenticity Needed in the Life Cycle?

At the five stages of records' acquisition, collection, indexing, access and utilization,

and preservation, when is records needed to ensure they are authentic? As digital records and data become accessible and available at any time and in any place, regardless of their stage of records' life cycle, it is getting difficult and meaningless to differentiate one stage from another stage. Guaranteeing the authenticity of records is required at every stage. That is, since the authenticity of a document verifies that the document is the same as that which a user expected based on a prior reference and ensures that they are unaltered from the time of creation, access, maintenance, and preservation is required over many stages of records life cycles. Authenticity is to demonstrate the integrity of documents and retaining authenticity is used to verifying authorship of records and for preservation strategies. That is why ensuring authenticity of records in digital environments needs an integrated approach to identifying requirements of authentic records and managing electronic records from appraisal to preservation. As such an effort, one research project is in progress.

#### Exemplary Implementation in InterPARES Project I

InterPARES project is an International Project on Preservation of Authentic Records in Electronic Systems: multi-national, multi-institutional, multi-disciplinary collaborative research project (1999-2002). Participants include Canadian team, American team, Italian team, European team, Asian team, Australian team, and Global Industry team (CENSA). Currently InterPARES II (2002-2006) project is in progress with focus on experiential, interactive and dynamic Records. The goals of the project are: 1) to examine issues relating to the durability, accessibility, and usability of electronic records systems and the authenticity of records for the long-term preservation; 2) to develop the procedures and resources, strategies and standards necessary to preserve authentic electronic records; and 3) to identify and model the form, function, and structure of

digital systems, their content, and their metadata critical to meeting these needs.

Research task forces focus on developing conceptual requirements of ensuring authenticity in appraisal, preservation of records management as well as policy and standards in organizations (InterPARES Project).

The Authenticity Task Force developed a template for analyzing electronic systems and any records they may contain on authenticity requirements in different types of electronic records. 32 case studies were collected for analyzing what are the requirements of authenticity in electronic records systems and identified baseline requirements and benchmark requirements for authenticity. To assess authenticity to records, records attributes and linkage to records should be expressed in a way to ensure the identity and integrity of records. In addition, permissible access, secure procedures, media, and technology should be ensured by establishing documentary forms, authentication, and identification of authoritative records. To support authentic records production, controls over records transfer, maintenance and reproduction should be demonstrated. Reproduction process and its effects should be documented.

As the concept of authenticity becomes one of the most emergent issues in the management of electronic records in recent years, ensuring the authenticity of electronic records is more important. This presentation provides that guaranteeing the authenticity of records is required at every use and management of digital records to keep the integrity of documents. Many efforts are going on to understand better the authenticity of records. The researchers hope in recent years we can take a step forward to finding a way to ensuring the authenticity of digital records by better management and better technology.

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