

# Concept, Information System, and Process: Exploring the Relationships Between Records and Organizational Memory Towards an Integration

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**Keywords:** Organizational Memory, Knowledge Management, Records Management, Information System.

**Abstract:** The utilization of cognitive technologies in records management and the richness of information resources stored in current organizational memory information system (OMIS) highlight the vague positioning of OMIS and electronic records management system (ERMS). This article provides an analysis on the relationships between records and organizational memory from three dimensions including the concept, information system and management process by adopting comparative methodology and literature research. On comparing the nature between the terms, it clarifies that records should function as raw material to be transferred into knowledge of organizational memory in practice. Accordingly, the gap between OMIS and ERMS that fails to actualize the connection between records and organizational memory is explained. In order to facilitate sufficient knowledge management, a possible conceptual solution is proposed to procedurally integrate management of records and organizational memory with OMIS and ERMS. Further noteworthy research are also provided according to the analysis.

## 1 INTRODUCTION

The role of information technology and information system in supporting knowledge management and organizational memory have been discussed, (Robey et al., 2000; Alavi and Leidner, 2001; Perez and Ramos, 2013; de Azeredo Barros et al., 2015) while the extent that information technology can support the management of organizational memory depends much on the objects that information systems are developed to process with. Despite the plenty of studies in respective field of organizational memory, knowledge management, information system and records management, the exact forms of information stored as organizational memory remains vague and various in different perspectives. An enhancement of the practicability of organizational memory on the basis of recognizing its tangible retention forms is emphasized. (Robey et al., 2000; Dow et al., 2013; de Azeredo Barros et al., 2015) Studies about organizational memory information system (OMIS, also referred as knowledge management system, KMS) should pay more attention to the exact type, provenance, content, context and processing of

information to be retained as knowledge or organizational memory, so as to facilitate its practical development.

Records as artifacts is considered to be a major and important category among the various retention forms of organizational memory (Walsh and Ungson, 1991; Stein, 1995; Moorman and Miner, 1997) for the reason that it is the final consolidated object that document activity processes of an organization. In digital environment, electronic records are required to be simultaneously captured into the electronic records management system (ERMS) at the time being created with adequate metadata and are arranged with an intention for long-term preservation. Solutions such as data and text mining (Ward et al., 2005; etc.), ontologies building and utilization (Bountouri and Gergatsoulis, 2011; etc.), visualization (Xu et al., 2011; etc.) etc. are brought into recent research related to archival electronic records management, which indicates that archival electronic records can be exploited as knowledge through information technologies utilized in general knowledge management and knowledge discovery. Whereas OMIS may also include identical information as

documented in records so as to be analyzed and mined to be explicit knowledge. Due to the similarity in the process of knowledge management, the role and function of ERMS in practical work is overlapped with OMIS to some extent.

Accordingly, this paper attempts to analyze the following interrelated issues:

**Q1:** What is the theoretical and practical relationship between organizational memory and records?

**Q2:** What is the relationship between OMIS and ERMS in both current and ideal sense?

**Q3:** To what extent can the management of archival records integrate to the construction of organizational memory?

## 2 NATURE OF ORGANIZATIONAL MEMORY AND RECORDS

### 2.1 Essence of the Terms

Records is byproduct generated from the past activity and it also functions as information resources from which people acquire evidence or thoughts and ideas about the past to support present decisions. (Yates, 1990) In this sense, records is similar to the essential nature of organizational memory as *object* (Stein, 1995; Abecker and Decker, 1999; Ackerman and Halverson, 2004). While the essence of organizational memory is more emphasized as being knowledge, records is acting more of being evidence. As The theory of “records continuum” presents four sequential levels in the dimension of *evidential axis* as *representational trace*, *evidence*, *organizational/individual memory* and *collective memory*. (Upward, 1996; McKemmish, 2001) It is commonly considered that the professional management of records constructs integrated memory for different levels from trace to society.

### 2.2 Difference as being Knowledge

Organizational memory is essentially managed as explicit knowledge. (de Azeredo Barros et al., 2015) It is identified for the purpose to provide applicable knowledge for organizational decisions, thus the implication of constructing and processing organizational memory is to acquire applicable knowledge. While records is rather primitive stable

information in which knowledge is tacit but easy to be discovered given clarified demand and semantic structure. Records managers identify records in order to preserve valuable evidence and complete traces of activities; the consideration of access to records is relatively separated from the original goal to collect it since it is almost impossible to anticipate potential use demands.

The reason why records is considered to be an important retention form of organizational memory ascribes to the fact that records collections are mostly selected through constructive archival appraisal and are systematically arranged for unarticulated potential use, which enables knowledge to be explicit through certain approaches such as text mining, reasoning or by utilizing ontologies, so as to function as easily accessible organizational memory.

It can thus be concluded that, organizational memory is managed as *knowledge* with the primitive purpose to benefit from inherent explicit knowledge. While the essence of records as *trace* separates the purpose of collecting it and using it, rendering the knowledge in records to be tacit and await to be discovered for various use. In this case, clarified use demand is important.

## 3 GAP BETWEEN ORGANIZATIONAL MEMORY INFORMATION SYSTEM AND ELECTRONIC RECORDS MANAGEMENT SYSTEM

Generally, the core function of OMIS is *knowledge management*, involving the processes of capturing, retaining, accessing and using of knowledge. In contrast, ERMS is constructed for the purpose of capturing, retaining and accessing electronic records, the underlying core of which is *records management*.

### 3.1 Difference in Information Resources

Records is practically a major resources applied in OMIS, especially those produced by individuals. However, current OMIS and ERMS acquires and manages different types of records. Specifically, records acquired by OMIS are mainly those produced by individuals that contain individual thoughts and experiences. While records retained in ERMS is organizational records and often includes documents

with formal patterns as evidence to fulfill the requirements of either jurisdiction or informational reference or cultural continuity.

Although it is conceptually held that records is a major source of knowledge as organizational memory, practical construction of information systems reveals that the actual type of records acquired by the two systems are different. It practically indicates that the concepts of records and organizational memory are overlapped rather than one included by the other as theoretically stated. This explains why the disciplinary communication of research in the field of records management and organizational memory seems to be one-sided that records management adopt a lot the perspectives of memory and knowledge management, while the role of records could seldom be seen within research of organizational memory.

### 3.2 Characteristics of Systems

Most of the current OMIS function as a platform or tools to provide access to organizational information or to bear communication within the organization as a process to facilitate knowledge reuse. The decontextualization and recontextualization (Ackerman and Halverson, 2004) of information is core to the extraction and reuse of knowledge, which is also one of the most remarkable challenges for the development of OMIS. ERMS is essentially a repository of electronic records identified with archival value; and it functions as a recordkeeping system and a platform that provides access to reliable primitive documental information resources. Based on the principles of records management, it stresses much on the maintenance of stable linkage between records and its contextual information, e.g. metadata maintenance and continuous classification (Bak, 2012) etc.

Consequently, it can be seen from the above that OMIS and ERMS are designed and implemented for different purposes. According to theoretical statement, primitive records should be a source of organizational memory. Ideally, ERMS should be focused in recordkeeping and function as fundamental repository of archival information resources, while OMIS uses records from ERMS as material resources to extract knowledge. However, according to development and implementation research of OMIS and ERMS (Parboteeah et al., 2011; Bayram and Demirtel, 2014; de Azeredo Barros et al., 2015; etc.), there is still gap in the connection of the system utilization.

## 4 SEAMLESS INTEGRATION OF THE PROCESSES

Basing on the position that records should practically transfer into knowledge to be the source of organizational memory, it is necessary to analyze the procedural integration of records and organizational memory management.

### 4.1 The Construction Process of Organizational Memory and Role of Records

On the whole, the construction of organizational memory consists of knowledge demand identification and knowledge extraction. The former is based on the analysis of organizational communication and the semantic structure for identifying and retaining knowledge should be established by the system initially (de Azeredo Barros et al., 2015). Whereas the latter should utilize various information resources distributed in different organizational information systems including ERMS, and facilitate reuse of knowledge through categorization of meta-memory. (Nevo and Wand, 2005)

Accordingly, the use demand of records is essentially a source to the analysis of knowledge demand, and records stored in ERMS as primitive information resources should be able to transfer into knowledge. It is thus indicated that current solutions in analyzing records demand and exploiting records content should stress more on realizing its knowledge value so that it can subsequently be used as organizational memory.

### 4.2 A Procedural Integration

There are currently a few of solutions essentially facilitate the procedural integration of organizational memory and records. Such solutions and strategies can be generally categorized into two types.

The first type refers to the cognitive technologies utilized in the reuse of electronic records. For instance, data mining is used in the exploitation and reuse of Web Archives. (Larson et al., 2014; Nguyen and Weber, 2015) Case-based reasoning is used in annotation in digital archives. (Doumat, 2014) Ontology research is also conducted in the construction and reuse of archive and records. (Askhoj et al., 2015)

The other type refers to the design, development and implementation of integrated content-based information management systems for the purpose of facilitating organizational information resources integration and reuse, among which the enterprise content management (ECM) earns much attention. It is argued that ERMS should be integrated with ECM (Sprehe, 2005) so as to better perform the primitive value of records. Within the development of ECM, records came to be a significant part of the information resources stored in ECM. (Alalwan and Weistroffer, 2012; Katuu, 2012)

Current solutions focus on a significant procedure of records transferring into knowledge, but it fails to solve the management problem in procedural integration. That is, how do the demand of knowledge impact and direct the transfer of records into knowledge; and how can the actual information systems as ERMS, OMIS, KMS and ECM be allocated to proper function and to integrate and interact with each other smoothly within an organization. In the author's opinion, such issues are worth of being further studies and solved so as to enhance the utilization efficiency of information technologies and systems.

## 5 CONCLUSIONS

The integration of records and organizational memory is not only a technological issue, but also depends much on the management mode of organizational information resources.

(1) According to theoretical analysis, records should function as a significant source of organizational memory, which embodies as knowledge in actual practice. To align with the principle articulated in theory, records should be extracted and transfer into knowledge of organizational memory. Current solutions have been actualizing such transfer through cognitive technologies.

(2) However, it should also consider the issues in procedural mechanism of records transferring into pragmatic intellectual organizational memory. One of a noteworthy issue lies in the managerial and functional positioning of OMIS, and the integration of OMIS (KMS) with ERMS. A possible solution derived from the analysis in this paper is to reallocate between OMIS and ERMS, in which ERMS functions as repository and archival management platform for reliable and primitive electronic records, while OMIS

automatically extracts information resources accord with knowledge demand from ERMS and process the information to produce knowledge.

(3) Another important issue is the loop between knowledge demand, records transfer and organizational communication, which also raises requirements for the integration of the information systems so as to ensure and facilitate the dynamic process. Basically, current OMIS can support the actualization of the loop, but the interaction with ERMS to acquire "primitive knowledge material" should be reinforced.

Much efforts need to be done in further studies, including further clarifying the positioning of the information systems; the transferring relationships between records and organizational memory and its realization in the environment of information systems; and the connection between knowledge demand identification and the corresponding records extraction. Such research would be beneficial to the development of organizational knowledge management and records management, as well as promoting interdisciplinary studies.

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