Chapter IX
Knowledge Management and Lifelong Learning in Archival Heritage: Digital Collections on a Semantic Scope for Educational Potential

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ABSTRACT

Archives have a key role to play in underpinning learning in its broadest sense, both as a formal activity within an institution and informally within the community. This is becoming especially important in an increasingly KM-based environment. This chapter provides an overview of technologies that can be applied to archival knowledge management. Furthermore, it assesses their actual or potential contribution to the basic processes of knowledge sharing within archival organizations, with a focus on lifelong learning. The scope of the first section (the screens) is to identify new developments that seem to be significant and to relate them to technology research in the archival field. The second section (the frames) discusses the concepts supporting digital collections by integrating collections of digitized archival resources to create new services and infrastructures. The third section (the agendas) analyses -from the educational perspective of lifelong learning- important social benefits, both quantitatively and qualitatively, of developing new infrastructures for accessing and using archival resources.

INTRODUCTION

Structured information of historical nature traditionally represents the vast majority of data collected and accessible to archival organizations. Acquisition records, exhibition catalogues and use data are all examples of these, even though they are still largely created in paper form. Exploiting
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this information in the information age requires systems for managing and extracting tacit knowledge from large collections of structured archival data and applications for discovering patterns and relationships (=Knowledge Management Technology, KMT).

The so-called Semantic Web revolution has exposed users of archival collections to the experiences of searching and taxonomy browsing and has reshaped their expectations of the knowledge retrieval process from archives, not only while browsing the Web, but more importantly, while at office, performing their research. In order to achieve this semantic integration, KMT proposes the usage of metadata and ontologies as the conceptual backbones of digital archival description; more, of the inclusive conceptualization of data needed to reflect the content, the context and the structure of the archival information in the digital world.

Several benefits are estimated of using such an approach in the archival sector. First, in the area of domain modeling ontologies facilitate interoperability between IT systems (=correlation engines) by providing shared understanding of the specific thematic domain. Second, ontologies provide the formalization of shared understanding necessary to make such understanding machine-processable. Such machine process ability is the basis for the next generation of the World Wide Web, allowing archivists and users to achieve compliance with existing Web standards. Finally, the explicit representation of the semantics of data, in combination with ontologies, enables IT systems to provide a qualitatively new level of archival services in a global environment (Stojanovic, 2004). The vision is to construct digital libraries for archival collections within the semantic scope; thus, to provide knowledge-based electronic access to collection level descriptions of the archival material.

THE SEARCH SCREEN: MAPPING SEMANTIC CHALLENGE IN THE ARCHIVAL INFRASTRUCTURE

Participation in the web of archival institutions requires a common language, a common technological structure and development of content that is relevant and captivating. In this context, archiving different historical collections in the digital age presents for the archival sector at least two semantic challenges:

- Incorporating established prime sources content vocabularies (=metadata) for built-thesaurus that are sensible to all communities of different users, scholars, students, life-long learners (“language for humans”).
- Implementing a technological structure that classifies these terms and defines their relationships in a scheme (=ontologies) that can be processed by users-friendly electronic applications (“language for machines”).

The archival domain --along with the other two major cultural sectors, libraries and museums-- is one that has long experience of developing and implementing metadata systems, appropriate for archival finding aids. Traditionally, the archives have taken the lead in the development of descriptive metatada standards for historical information; they have also developed controlled vocabularies for subjects and the names of people, organizations and geographical entities.

A large component of archival activities have been focussed on context. Elucidating and preserving context is what assists with identifying and preserving the evidential value of records in and over time; it is what facilitates the authentication of those objects, and it is what assists researchers with their analysis and interpretation. While archival metadata has primarily existed in print