

Museums and archaeological knowledge representation

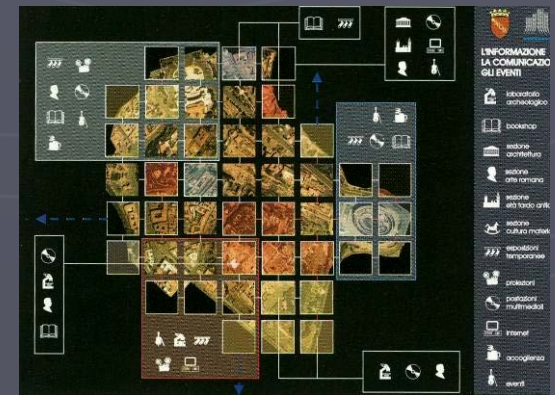
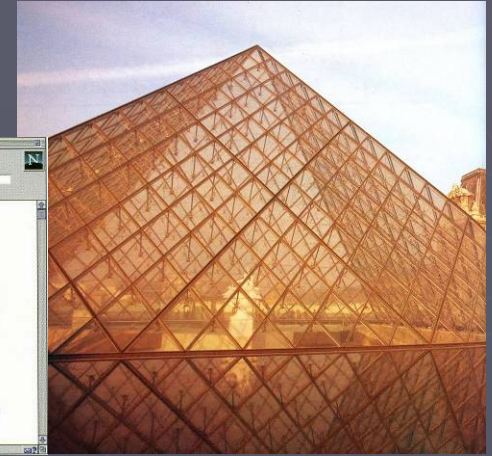
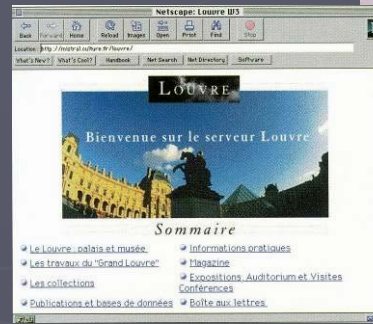
a cura di Costis Dallas

- Several international museums in the early 1990s were in the midst of a notable change, shifting their attention from the care of collections to communicating with their audiences, and changing their interpretive strategies from objects to object histories.



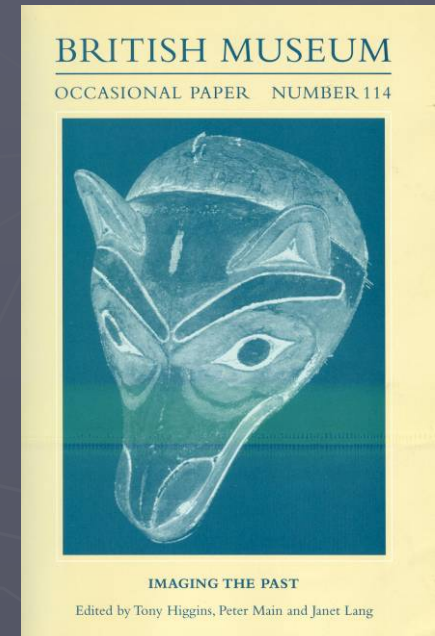
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- Collections management systems had been established for years in major international museums, and many already experimented with using electronic media for communication with the public. The revered "primacy of the object" was challenged by the ascent of *information*, touching upon all aspects of form, function and meaning of museum objects, and bridging the epistemic and pedagogical functions of museums themselves.



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- Relational databases, promoted at the time as the new *mantra* for museum documentation and collections management systems, were found to be a poor match for the representation of scholarly knowledge about museum artefacts. They are often heterogeneous, complex in terms of part composition and meaning layering, and densely connected with other important information, such as periods and events, places, time intervals and relationships, people and an almost indefinite array of possible associations.



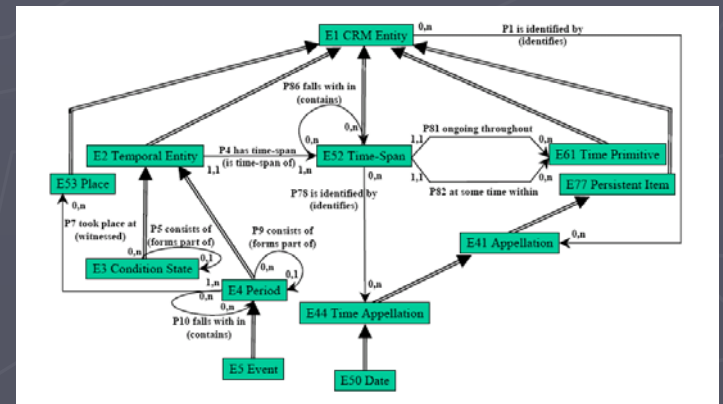
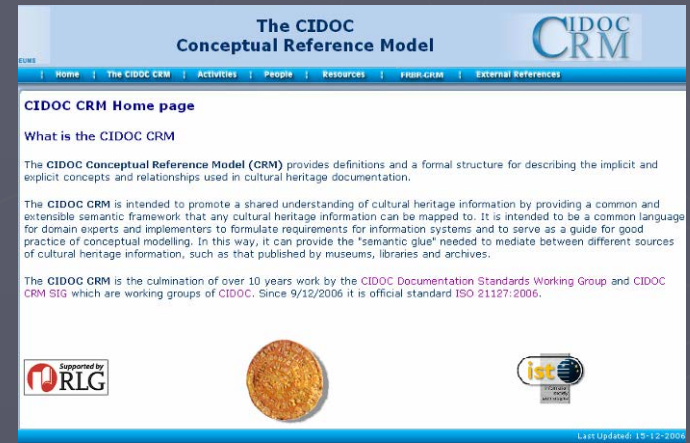
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- Debate promoted by the International Committee for Documentation (CIDOC) of the International Council of Museums has therefore focused on issues of Cultural Resource Management harmonisation with other metadata and cultural heritage documentation standards, as well as on ensuring its interoperability and information integration between heterogeneous cultural heritage information systems.



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- The establishment of research-oriented information systems with formal representations of artefacts amenable to descriptive analysis and conceptual manipulation, such as envisaged earlier by symbolic and structural archaeology, has been less debated. Nevertheless, the CIDOC CRM could be a useful foundation for building information systems for artefact research, providing for the expression of such compositional, locational and relational information as deemed crucial for archaeological knowledge work.



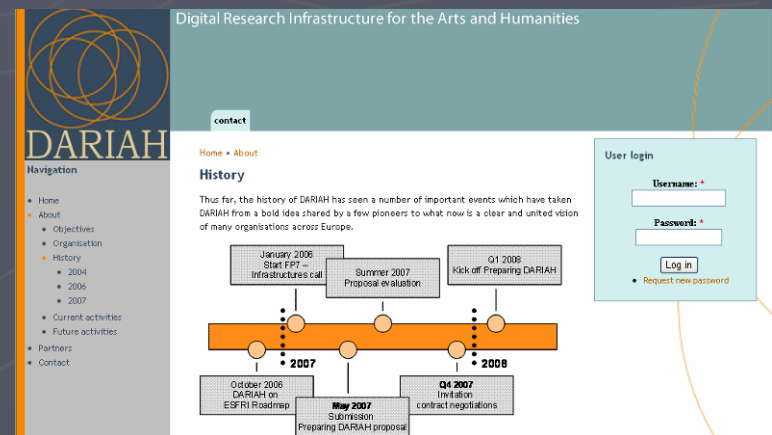
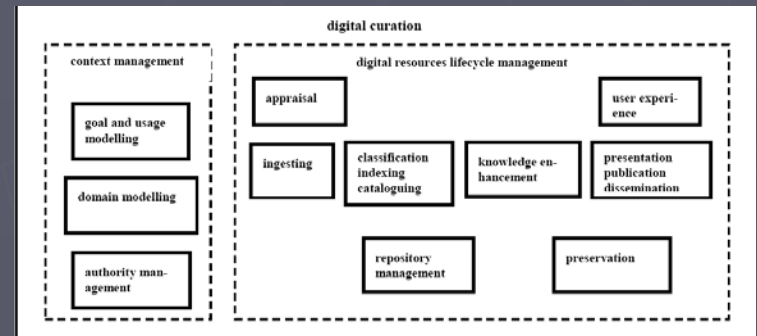
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- The 21st century marks the beginning of an era of post-disciplinarity. In the last decades, archaeology has been moving closer to other human sciences and has been increasingly reflexive of its epistemic nature and social role. Artefacts are seen from multiple perspectives, and the functions of places of memory – archaeological sites, museums, libraries and archives – in promoting engagement with the past become increasingly blurred.



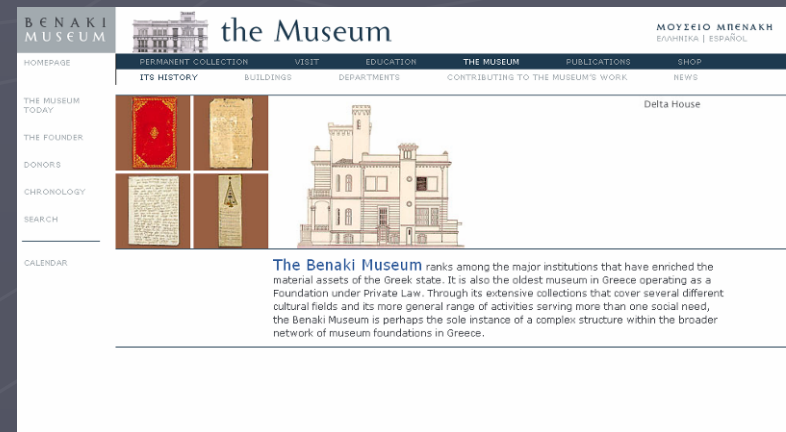
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- As the spectre of information deluge, and the danger for future obsolescence of epistemic memory becomes a reality, the interests of information managers and curators, and those of scholars and field researchers, converge. In collaborative projects such as *DARIAH: Preparing the European digital infrastructure for the arts and humanities* a key priority for future information systems should be their ability to express research questions based on domain knowledge and epistemic object representations: themes that motivated many of the scholars who, back in the early 1980s, joined the international community of archaeological computing.



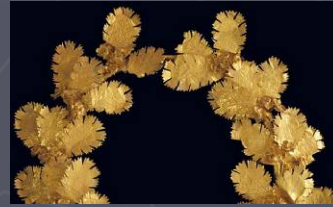
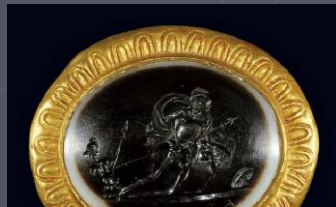
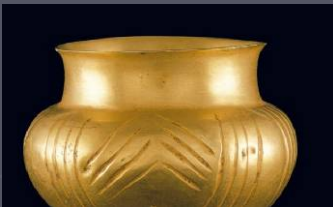
Benaki Museum

- In 1990, the Benaki Museum established a Documentation and Systems Department. Its immediate task was the practical generation of simple electronic inventories, but it soon came across the object description and representation issues archaeological research was already struggling with.



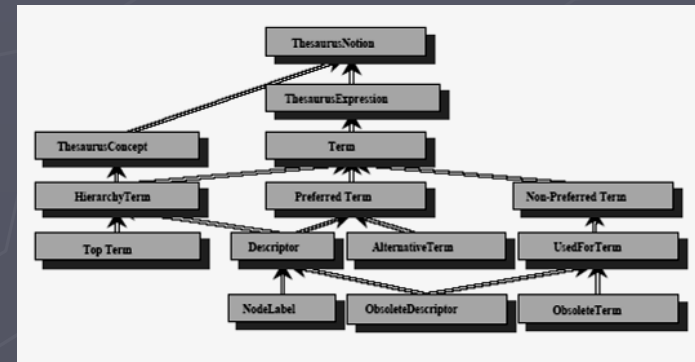
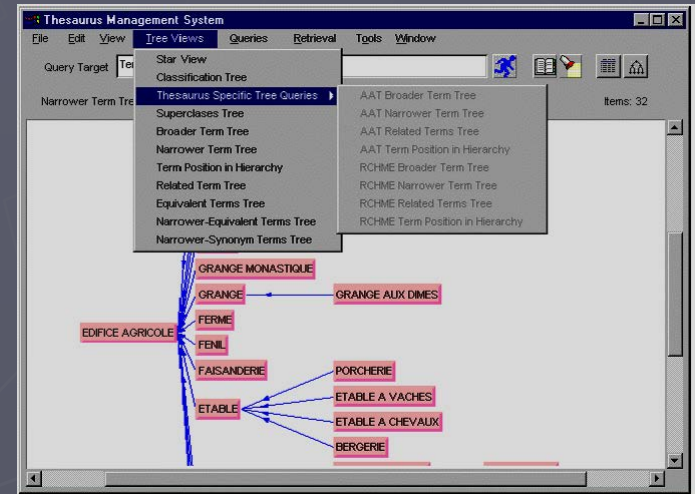
Benaki Museum

- In a heterogeneous collection of archaeological artefacts, art works, ethnographic objects, historical memorabilia and curia spanning from Aegean prehistory to the mid-20th century, the challenge of providing a descriptive system that could account adequately for variability and complexity in the collection was, indeed, a formidable one.



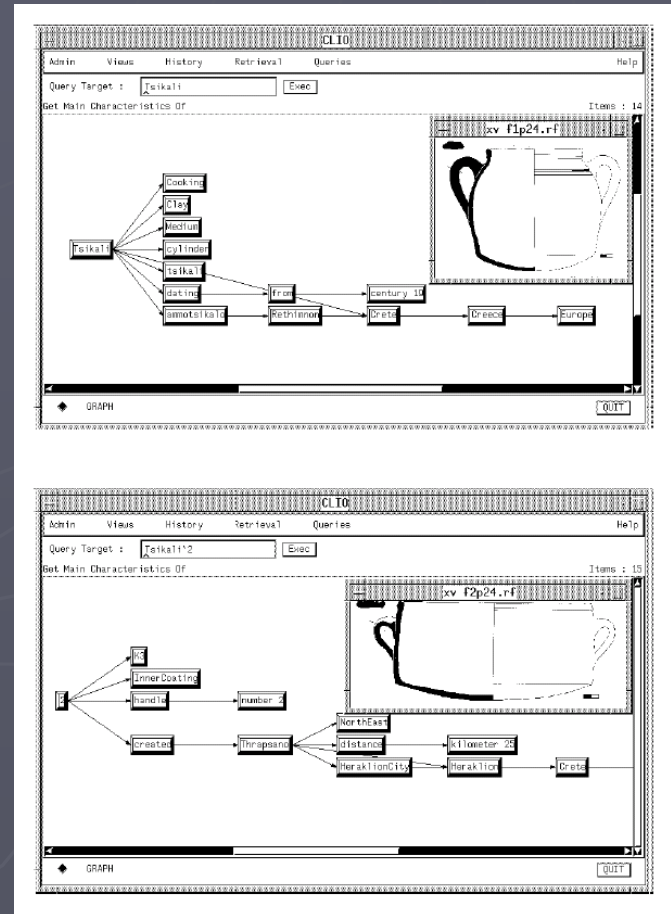
Benaki Museum

- Discussions promoted by the Data Standards Working Group of CIDOC confirmed that the problem concerned the whole museum community. Since 1992, the Benaki Museum team worked together with the Centre for Cultural Informatics at ICS/FORTH to develop a semantic information system for the storage and manipulation of scholarly knowledge on museum artefacts.



Benaki Museum

- The system, CLIO, was based on ICS/FORTH's *Semantic Index System*, an information kernel capable of incorporating representations of domain knowledge from material culture disciplines as well as representations of individual artefacts, involving such issues as the relationship between artefact types, the description of compositional structure of complex objects, and the elucidation of the notions of artefact creation, modification and use.



Benaki Museum

- The CLIO model was adopted in 1996 by CIDOC as the basis for the definition of an international Conceptual Reference Model, or ontology, for cultural heritage information. The CIDOC CRM was expanded and improved by a team of international researchers from the museum disciplines and computer science, and its current version was accepted in 2006 as ISO standard 21117.