"Archäologische Museen vernetzt" An Information System for the Archaeological Museums in Bavaria

Kurt Schaller, Christof Flügel, Jakob Egger and Christian Uhlir

Abstract Within the project "Archäologische Museen vernetzt" we create an information system that combines a low entry level with in depth knowledge. We present hard facts by employing a soft thematic approach. The prototype is designed for Roman archaeological museums, finds and sites in the "Mainlimes" territory in Hessen and Northern Bavaria, from Groß-Krotzenburg to Miltenberg, Germany. A diversification to other museums and regions in Bavaria is planned.

1 The project

The project is based on a common initiative of the "Archäologische Staatssammlung" and the "Landesstelle für die nichtstaatlichen Museen in Bayern". Technical concepts, development and implementation are conducted by "CHC – Research Group for Archaeometry and Cultural Heritage Computing, University of Salzburg". Funding is provided by "Bayerische Sparkassenstiftung".

From the beginning on there was the specification given by the sponsoring institution that the system must be able to serve as a flexible information module. It

Kurt Schaller

University of Salzburg, Dep. Geography Geology, Research Group for Archaeometry and Cultural Heritage Computing, Hellbrunnerstraße 34/III, A-5020 Salzburg e-mail: kurt.schaller@sbg.ac.at

Christof Flügel

Bayerisches Landesamt für Denkmalpflege, Landesstelle für die nichtstaatlichen Museen Alter Hof 2, 80331 München e-mail: christof.fluegel@blfd.bayern.de

Jakob Egger

University of Salzburg, Dep. Geography Geology, Research Group for Archaeometry and Cultural Heritage Computing, Hellbrunnerstraße 34/III, A-5020 Salzburg e-mail: jakob.egger@sbg.ac.at

Christian Uhlir

University of Salzburg, Dep. Geography Geology, Research Group for Archaeometry and Cultural Heritage Computing, Hellbrunnerstraße 34/III, A-5020 Salzburg e-mail: christian.uhlir@sbg.ac.at

should work not only for the Mainlimes area, but should easily be adapted for possibly any kind of setting dealing with archaeological/historical museums and sites. Accepting this challenge it soon turned out that the system has to be designed highly abstract in more than one way

- "information containers" (for sites, finds, museums) have to be designed as combinable "modules" by themselves
- the whole system has to be laid out in a way that it could easily be implemented in any kind of archaeological information environment

So we use the term "module" now with two meanings: on the one hand it refers to an expandable number of information containers, each modeled as a possibly independent kind of repository (Fig. 1). On the other hand it denotes the concept of the whole system itself.

2 Museums, sites and finds

The system offers spatially structured and harmonized views on all information provided by supra-regional and regional museums and collections. We visualisize the strong ties between the museums and the extramural (architectural) monuments which are already part of the Limes world heritage. Links to museums, sites and finds can be found on almost every page of the information system. The user can start at a modern township and is guided to archaeological sites in the vicinity. Here he is offered (if available) touristic or thematic information; or he can continue to explore museum pages. The system is intended to support the user in exploring the services made available by the museums as far as possible.

3 Storytelling

If specialists are dealing with archaeological objects they usually do this in terms of typology, provenience and chronology. Historical, social and other cultural contexts are often not explicitly worked out – they are part of complex background knowledge. In recent years, museums have employed "storytelling" as a vehicle to communicate implicit contextual information side by side with explicit factual knowledge. The information system uses this concept on two different occasions: at first a "thematic map" provides contextual information that can be accessed from almost anywhere in the system (see 6.3 below). Secondly every museum is characterized with a least one "focal point" based on the collection of artifacts housed in the museum. Most frequently these focal points refer to the local or regional archaeological situation. They form another link between the finds in the museum and external archeological sites.

4 Usability

Usability on the end user level means that it is strictly avoided that the application appears "mighty" or "powerful" by displaying countless control panels or push-buttons. The user interface is designed as uncluttered as possible. We apire a zero learning curve for users. The navigation concept avoids fancy extravagancies and intentionally follows well established patterns.

As the system offers multiple ways to access the content there is a certain danger of getting lost in too much and too heterogeneous information. The answer to this is consistent page design and the consequent use of interactive cartography as a primary tool for navigation.

Usability on the level of system or content administration means that the "mod-ulisation" of the data model is carried out very consequent. Adding a hyperlink, an image or a movie file to a data record is simply a matter of selecting an item from a popup menu. Even the implementation of a new interactive map is a matter of a few minutes (see 6.4 below).

5 Technical basics

The application is developed to run completely in a non-proprietary open source LAMP environment, using AJAX style techniques for client side scripting (mainly in the field of interactive cartography). The user interface is implemented fully in HTML and CSS. A Flash plug-in is only required for the display of movies, but alternatively users can download films in wmv or H.264 format.

6 Organization of content

The content modules shown in Fig. 1 roughly correspond to the top menu of the information system in Fig. 2.

6.1 Museums

Users can access the museum pages via an alphabetical list or an interactive map. There they find basic info concerning the museum, the focal points of the collections and finally the finds. Additionally there are links to local museum internet pages and the information platform offered by http://www.museen-in-bayern.de, run by the "Landesstelle für die nichtstaatlichen Museen in Bayern".
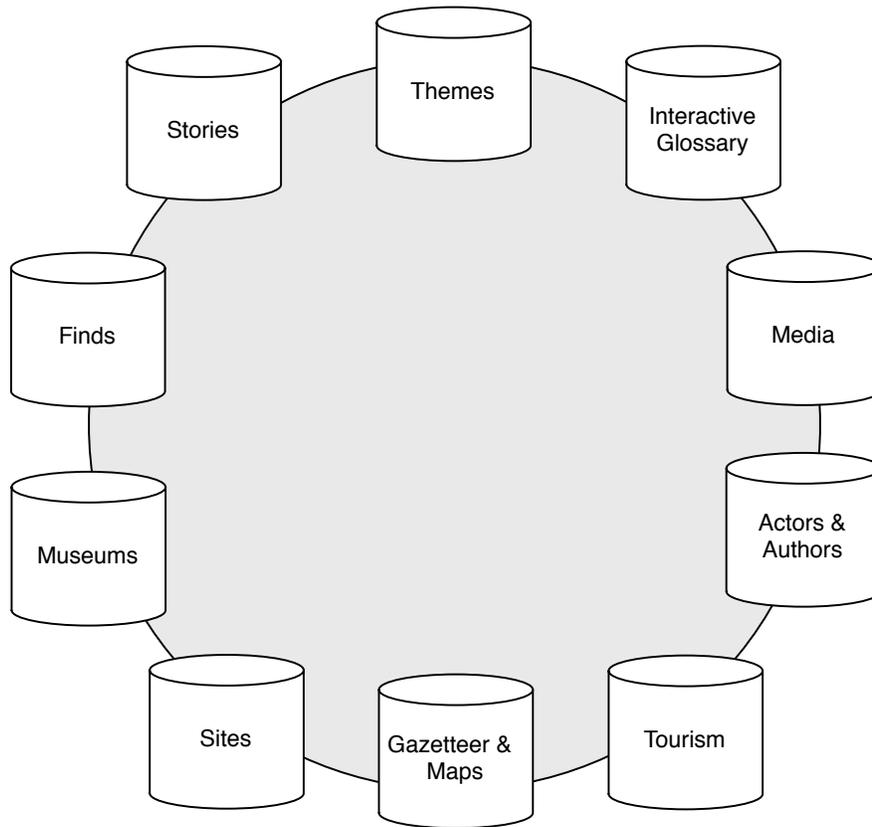
© CHC – University of Salzburg 2009

Fig. 1 Information modules in the database

6.2 Modern towns and archaeological sites

Also towns and archaeological sites can be accessed via either an alphabetical list or an interactive map. Starting with information on the modern town, the user is lead to more information concerning museums, info points, archaeological sites or touristic infrastructure (e.g. hiking or biking trails).

6.3 Themes

Themes are meant to supply the user with socio-cultural contextual information. A click on the top link "themes" will produce a thematic diagram that resembles a

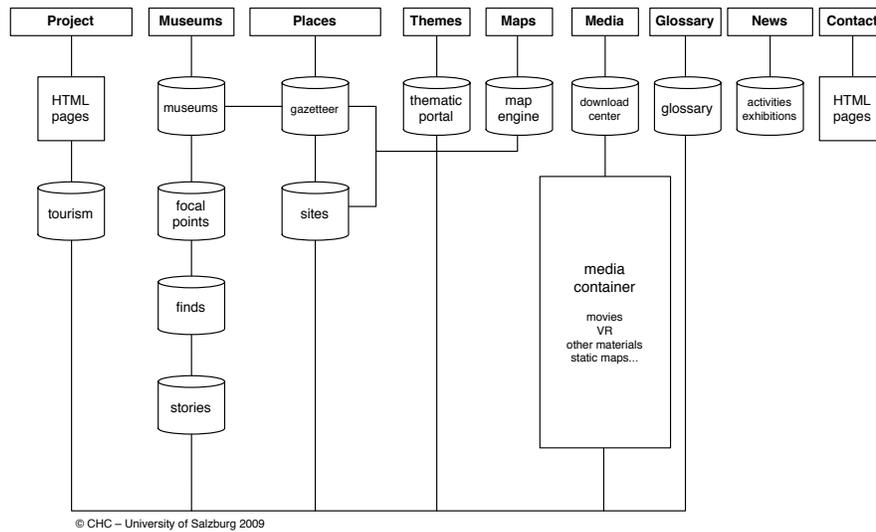© CHC – University of Salzburg 2009

Fig. 2 Overview of the website organisation.

mind map. (Fig. 3) This diagram is generated on the fly, employing an algorithm that has its origin in theoretical physics – the simulation of electrostatic repulsion. Themes are organized hierarchichally with a "child of" relation in the database. Adding a new theme will automatically change the appearance of the thematic tree.

6.4 Maps

Generally there are two sorts of maps implemented.

- Maps that can be used for general orientation. These maps show terrain, rivers and few selected additional features. Modern elements like highways or railway tracks are omitted, as they are not appropriate in a map intended for the display of historical content. The maps are based on NASA SRTM data, the map engine is provided by CHC (http://chc.sbg.ac.at/maps).
- Maps implemented using Google Maps. These are used for routing services to museums and sites.

This combination of different kinds of interactive maps from different sources for different application areas has proven to be very efficient and user friendly, in a number of already implemented online archaeological information systems.
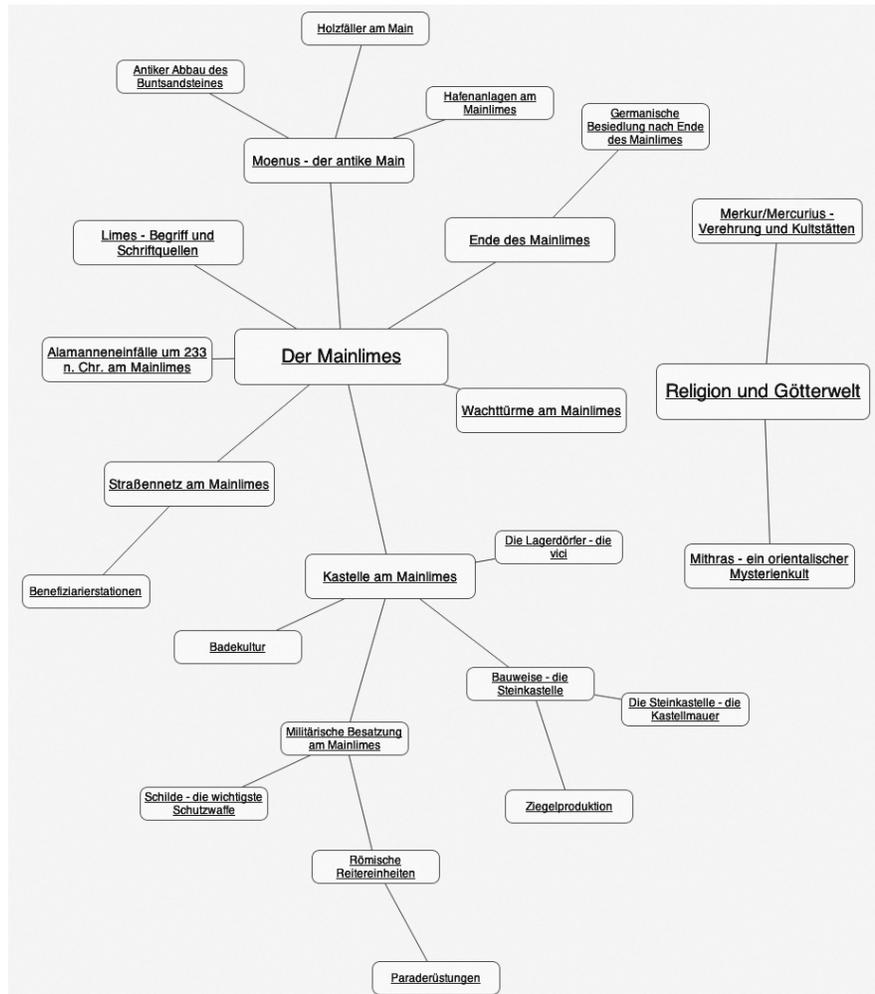
Fig. 3 This thematic diagram is used on the Mainlimes website to guide users to contextual information.

6.5 Media

All kinds of media, comprising pdf files (e.g. materials provided by the museum educational services) , images and movies are stored in one database container. A movie was created for the Mainlimes information system (http://www.boundary.de). This movie is available in German and English, running 12:30 minutes. It will be distributed via a special YouTube Limes channel (http://www.youtube.com) and also be available as direct download in several common file formats.

6.6 Glossary

The glossary works in the background, highlighting archaeological terms everywhere on the website. The basic vocabulary was built up in a number of Limes related projects (see: Frontiers of the Roman Empire, http://www.romanfrontiers.org; Der römische Limes in Österreich, http://www.limes-oesterreich.at; Archäologisches Informationssystem für Oberösterreich, http://archaeologie-ooe.info) and is getting adapted step by step to the vocabulary needed for the Mainlimes.

6.7 News

The biggest part of the content is currently produced offline by specialists, under supervision of the project's leading archaeologists. Information about events, exhibitions and other activities can be administrated online by local actors.

7 Conclusion

The information system "Archäologische Museen vernetzt" is scheduled to be online in spring 2010. It will represent a contemporary, state of the art public information system. We provide users of various backgrounds with easily accessible information on current research, employing Web 2.0 technology like YouTube and Google Maps along with custom designed interactive cartography.

At a time where "user generated content" is ubiquitous, we emphasize on "professionally generated content", with utmost stringent data organisation and innovative ways of communicating complex matter.