ArchWeb Forum: An Archaeology Oriented Web Environment

K. Kechagias, D. Politis

Informatics Dept., Aristotle Un. of Thessaloniki, kkecha@csd.auth.gr, dpolitis@csd.auth.gr

Abstract

A quick search on Internet is indicative of the current situation regarding the field of Archaeology. To the best of our knowledge, there has been no organized attempt to create a coherent, well-conceived multimedia powered and at the same time multilingual archaeological forum. Such an attempt would foster in spread of archaeology beyond the professionals, in wider and amateur cycles.

We develop a forum (ArchWeb Forum), actually a web-environment, where archaeologists and researchers can post articles about their scientific work and also support and enhance them with multimedia material, such as pictures, photographs, animations, video and audio content. Users can comment the articles and setup discussions. The forum is designed to be multilingual, in order to support the cultural diversity, the preservation of national identity, and also to facilitate the publication process. The translation process, which is part of every multilingual environment, is supported by automate translation machines and translators. Simultaneously, apart from the translations themselves, the first electronic multilingual dictionary in the domain of archaeology is built. In the future, it can continuously be updated and enriched, based on the flow of new articles and terms.

The system combines elements from forum, blog and Content Management System (CMS) technologies. This way it presents different aspects to different user categories and it can perform functions that cross the boundaries of the different technologies used.

Keywords

Web environment, forum, archaeology.

Introduction

The idea of creating an exhibition with visual content of archaeological findings from all around the globe, displaying full size pictures and copies of important Balkan artefacts, currently, located in foreign museums, seems that should take less time and money than actually gathering the artefacts and exhibit them. In fact, a global exhibition with artefacts from different sites is considered impossible as today's museums are very reluctant in transporting and exhibiting artefacts into others' exhibitions. Moreover, this transportation process would raise some threats to the artefacts (imagine the case where a truck transporting some of those valuables had an accident). Finally, some artefacts require special environmental circumstances in order to be kept and exhibited to the public.

An exhibition of photographs overcomes the bureaucracy issue and the dangers of transportation, as a simple gather and display of some photos of artefacts should not be so difficult. Supposing that the photos are gathered, another problem is quickly arisen. Not many visitors would be attracted to visit an archaeological exhibition presenting just photographs of items. So, some interior decorators should be hired in order to produce a very pleasing environment for the presentation of the photographs, which will enhance their contents and make the visitors overcome the fact that they see just photographs and not the items themselves.

The question posed is: *Is there a quick, easy and cheap way to exhibit various archaeological artefacts in a sole exhibition?* It is quite possible to overcome all these drawbacks just by changing the medium of the

photo exhibition: from paper photographs to digital photographs and from a physical museum to a virtual museum, residing on the Internet. This transition would definitely bring lots of advantages:

- Each archaeologist could upload the images of retrieved artefacts directly after the dig site. This approach not only separates the museum factor, but also enables the virtual museum to have a really larger photo exhibition than the real museum. As each archaeologist would like to promote his work, appealing and high quality photographs are almost guaranteed
- The virtual exhibition requires only a web hosting service. These services are quite cheap and accessible to anyone.
- No need for special decoration in order to compensate the lack of physical items presence. Moreover, as is the virtual museum case, the website content is much more important than the website visual design; some decoration expenses could also be kept down.
- A virtual exhibition is totally accessible from all around the globe. Every interconnected person, no matter where he is physically connected, is just a few clicks away from the exhibition.
- Finally, one of the main Internet's advantages is the ability to interact both with the content and other web surfers. Each image exhibit can be commented on by any visitor. These comments could also be questions, leading to conversations either with other visitors or the archaeologists themselves. An Internet community could be built around the visual exhibition, discussing and sharing information and ideas. And all this through a personalized experience.
- As the images in the exhibition are digitized, each user can download them, share them use them in personal essays and, generally, promote them (whenever copyright problems not occur). So, the virtual exhibition could allow the spreading of archaeological findings quickly to an even greater audience.

Thus, the solution is to move towards the new digital era of the Internet. This is not an easy procedure which can be accomplished by the exhibition managers. Some IT specialists (web application developers and web masters) are required in order to provide solid ground for the transition.

Building such an application framework (or choosing from the ones already created) is not an easy task for web developers. In fact, the development process might seem quite easy for an outsider, but it may prove to be a serious headache for the programmers that will undertake this task. Apart from the regular quality requirements (software security and stability), the web developers should also implement the following:

- Ability to present and manipulate multimedia content (images, streaming sounds/videos, Flash/Apollo/WPF presentations). This will ensure a rich user experience.
- Ability for some users (archaeologists) to upload such rich and copyrighted content to the server (which may lead to security problems).
- Multilingual support. A must for the 'balkanization' reality, which involves various countries with different languages.
- Translation support. The content uploaded in one language should be translated, and thus accessible, to other languages too.
- Author rights. Each author should have explicit rights to his work.
- Visitor community feedback. The content should be commentable by the users, who are encouraged to form a community.
- Easily spread. The content should be easily 'broadcast' and become known to a large number of people.

So, what kind of Internet technology should be used? To the best of our knowledge there is no specific web software which provides an adequate solution to all the latter problems and requirements. Some of them are solved by Forum software, others by Blog software, and others by Content Management Systems.

Structure and framework of operation

As it has already been mentioned what is actually needed in order to build a virtual exhibition is web software, a mixture of Forum, Blog and Content Management Systems (CMS). Internet Forum offers simplicity, preserves author rights and welcomes users into the community. Moreover, CMS can provide with the collaboration of experts required for the translation of rich multimedia content, while the powerful blog management and spread mechanisms would allow for content to become known through Internet directories.

As our system should be used by a group of non IT experts, the Internet Forum architecture is used as a framework for our proposed answer.

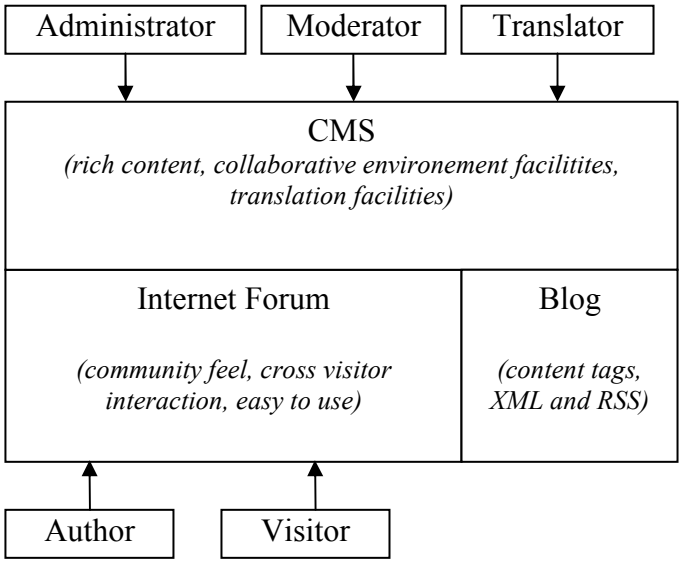

Figure 1: Architecture and access to the proposed system

This system was designed to be user group managed with simple user (visitor), author, translator, moderator and administrator being the available user groups. Each one is provided with a specialized view of the system together with a set of function panels and utilities.

The **simple users group** consists of all people interested in Archaeology and can access the web-page through Internet. No registration is required; access and navigation is gratis. Yet, in order for someone to be able to post comments / replies to threads and to experience a translated view of each article, registration is required

The **author group** consists of Archaeology scientists and individuals wishing to publish their work to the public. The functionality of this user type is the most crucial one, because the author writes the original articles and subsequently 'builds up' the Forum. 'Author' users therefore need to register in order to keep track of their announcements and articles and assist them with the writing process.

Translators, Archaeology scientists and researchers or even polyglots compose the translator group. These are responsible for valid translations from one language to another and this is what makes this user type of crucial importance. This is the reason these users have to register, that is to keep track of their re-postings and assist authors with the translation process. At the same time, one of the results of their work is the construction of the first multilingual dictionary of archaeological terms, which can be further used to facilitate the translation process. Translators need to log-in the system to be authorized.

Moderators are special users, authorized by the forum owner, to keep an eye on the content of the forum. *Moderators* can either moderate content on a category, a subforum, or even on the whole forum (the so-

called *Super Moderators*). According to a (usually public) set of rules, they can move threads from category to category, edit other users' posts and, finally, ban users from forum access when their behavior is unacceptable.

Finally, **administrators** face a CMS view of the system, which enables them to create/edit/move forums and subforums and to promote and denote users to the translator and administrator user roles.

For the first two roles (user and author), we adapt the Internet Forum model: threaded conversations between users which can be started only by archaeologists-authors (in order to ensure author rights).

As Internet Forums don't host articles but threaded conversations, they lead to the creation of virtual communities. Regular users get to meet each other, and by exchanging personal messages through the Internet Forum engine they reach a more personal communication.

The latter fact makes the Internet Forums an ideal network place to spend time on, get together with other same-interested users, exchange ideas, gather information and perform research.

Yet, as the number of users grows in an Internet Forum and as they get more personal by being members of the community they tend to leave the subjected conversation and start other, more personal conversations. So, the greater the number of users discussing in a forum, the greater the chance is that their interest field grows beyond the forum subject.

In order for this phenomenon to be avoided, the moderator user role has been introduced. Moderators are special users, authorized by the forum owner, to keep an eye on the content of the forum. *Moderators* can either moderate content on a category, a subforum, or even on the whole forum (the so-called *Super Moderators*). According to a (usually public) set of rules, they can move threads from category to category, edit other users' posts and, finally, ban users from forum access when their behavior is unacceptable.

The **translators** have a somewhat more CMS oriented approach as they can collaborate on the translation of authored content, in order to present it to a language different from the original.

Content Management, in general, is a set of processes and technologies that realize and support the evolutionary life cycle of information (content) when presented onto a medium (magazine, TV channel etc). In our case the information is related to archaeological issues and the medium is the Internet. As the Internet consists a digital medium the managed content is also digital. Due to this the content management procedure becomes far more complex compared to traditional 'print' content, as digital content is consisted not only by text and static photos, but also by videos, sounds, music, interactive presentations and of course any combination among them. No matter the presentation medium, according to content management, content life cycle consists of six primary phases (Fig. 2):

- Creation: The general idea is conceived by the content author who imprints it into the desired medium, usually through the procedure that is called *art* (Musician → Music, Writer → Text, Painter → Image, Photographer → Photo etc.).
- Update: As the time span required to create content varies (from very small to very large amounts of time) it is quite possible that the initial circumstances which triggered the content creation have changed. Some specific types of content are required to reflect the publishing epoch, so some updates are required.
- Publish: This is when the content is introduced to the public, the most important step of content management.
- Translate/Reform: Once the content is published it may be reformed in order to fill some other needs, not reflected in the initial creation procedure. For example, written text should be translated in order to be accessible by people not speaking the initial text language, or, an original music score could be remixed in order to be used in advertising campaigns.
- Archive: All the published content can be archived for future reference, both by content creators or by content consumers. The archive is usually publicly accessible
- Retire: This is where the content has finished its purpose and is being removed from public access, in order for other newer content to be promoted.

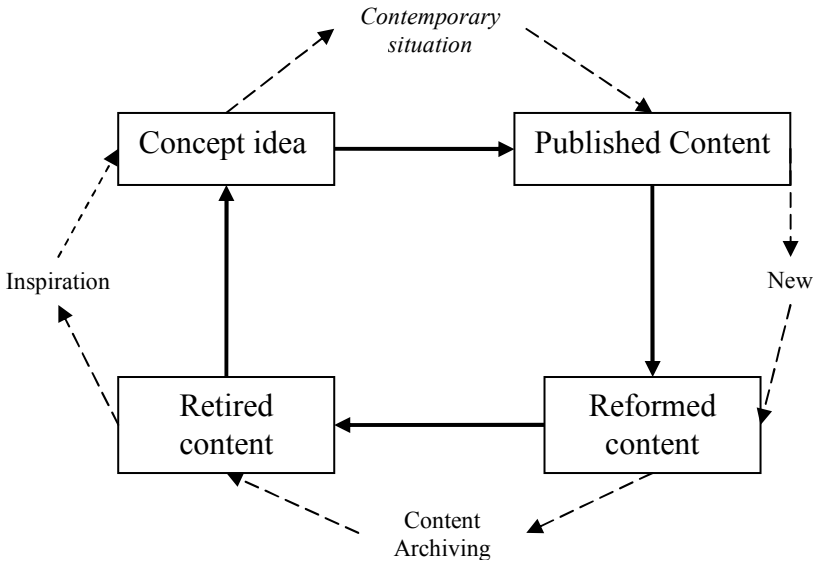

Figure 2: The basic stages of Content Management

As it is evident, content management is a fairly complex process which involves many coordinated steps performed by an equal number of specialists, all of them collaborating seamlessly together. These specialists are:

Retrieval of the published content can be facilitated by the relevant mechanisms used in blogs. As it is designed for personal use, a blog, does not impose very strict rules in content management, but as being a relatively new software (the first self-aware blogs popped up in the web around 2001) has 3 powerful management mechanisms:

The first mechanism is the conventional "subject category": Blog articles are (or at least supposed to be) grouped by subject into specific content categories. Yet, the case is that, most blog owners utilize a very small number of categories each one covering an enormous subject field (ex. "Miscellaneous" or "Personal"). This raises a great difficulty to the blog visitors as they cannot easily navigate in the content by browsing a subject category, as this involves them shuffling on general categories each one containing a large volume of articles.

The second mechanism is the "publish date" of each blog article. The main purpose for the blog software was to provide the means for a Web journal, containing content organized in chronological order. This is done automatically when the author publishes articles, as the publish date is recorded and according to this a navigation calendar is build. While this functionality is quite adequate for the purpose, the way blogs were designed, does not provide any means of subject control to the blog visitor. Therefore, the date archiving of the articles may seem useful to regular blog visitors only.

The third and most powerful mechanism for content management in blog software is the "tagging" mechanism: When a new article is published the author is called to write some key words that summarize or describe its subject field. These tags can prove to be very efficient to the visitor who can browse blog articles by tag. Another, less conventional, but equally powerful article browsing method is the so called tag cloud. The tag cloud is a specific area in a web page which contains the tags of the most popular articles. Most popular article tags are presented with larger fonts (this way gaining immediate attention from the viewer) while the less popular articles are presented with smaller fonts.

Yet, the tagging mechanism is not only a content management mechanism but also enables the content to be easily indexed by specialized search engines and/or directories and thus to automatically spread and become accessible to vast number of potential visitors:

When an article is published, the blog software can automatically forward the article tags along with the article URL to a directory service for future reference, through a search procedure.

Besides the main content that is written by the blog owner, another content type, equally important, is also hosted in blogs. This is the user feedback, expressed by article comments. After an article is presented, the visitor can choose to express his thoughts/opinions about the content he just read and to add a note for other visitors to see. This can be done through a commenting system in which every visitor can add something to the content of the blog.

The designed system out sketched above is the ArchWeb Forum, a hybrid web application that embraces the evolving new web technologies and uses them for the sake of archaeological science.

Conclusion

Readers could rightfully pose questions such as the one above and reserve reasonable doubts on the concept and implementation of another specialized forum among the innumerable ones one can access on Internet.

Yet, specialized forums were designed with a specific target use group in mind, taking under consideration its technical expertise and affiliation to the Information Technology.

From this point of view, the use of a specialized Internet Forum, especially for an author of a theoretical background may prove extremely valuable as it brings him in controlled and carefully crafted contact with the field of IT and Internet publishing. As a matter of fact, it clarifies the established in people's consciences as perplex and complicated world of computer technologies and humanizes it, to make use of a term related to Humanities.

The provisions of the application are as follows:

- *Quality Archaeology-Oriented Content:* Researchers, archaeologists, academics and authorized authors can post their announcements, research work, publications, articles and findings in a 'hypermedia' way, however as simple as a word document. Thus, one benefits from modern computer technologies without the prerequisite of expertise on handling complicated tools.
- *An Archaeology-Oriented Publishing Directory:* ArchWeb Forum comprises a gratis and effortless way for anyone to officially post an article and state an opinion within the context of archaeological scientific community. In other words, it gives the answer to the question: 'Where should I address to, to present my work to the public?'
- *Quick and Easy Content Publication:* Publication takes a matter of seconds; it requires no time-consuming procedures and the same applies for the translation process.
- *Knowledge Spreading:* It 'democratises' knowledge, providing open access to everyone interested in Archaeology, no matter where he/she lives and regardless of his/her academic, social, ethnic and age background.
- *Archaeology Online Community Builder:* Subsequently, this inclusiveness provides the opportunity for a fertile problematic and discourse amongst users.
- *Content Reference Authority:* SEEArchWeb Forum is actually to become a database containing a vast amount of information regarding archaeological issues.
- *Machine Aided Translation Facilities:* The auto translate function greatly enhances the translation process, by the moment new terms are continually being added to the dictionary.

In general, SEEArchWeb Forum is an invaluable resource for students, academics, archaeologists and researchers. Altogether with all elements mentioned as above, it radically changes the so far solidified perceptions of approaching Archaeology, meaning the exclusively old-fashioned study in libraries and the lack of a coherent and consistent database.

References

Antelman, K. (2004). Do Open-Access Articles Have a Greater Research Impact? *College & Research Libraries News*, 65(5), 372-382.

Avern, G. (2001). Progress Report on a New Technique for Recording Archaeological Sites and Excavations. *Université Libre de Bruxelles*, Belgium.

Bampton, M., & Mosher, R. (2001). A GIS Driven Regional Database of Archeological Resources for Research and CRM in Casco Bay, Maine. In Stancic, Z., & Veljanovski, T. (Eds.) *Computing Archaeology for Understanding the Past*, CAA 2000, BAR International Series 931, 28th Conf, Ljubljana, Slovenia, 139-142.

Börner, W. (2000). Vienna Archaeological GIS. *In Proceedings of the 28th CAA conference*, op.cit., 149-152.

Clarke, J. (2001). Questions raised by electronic publication in archaeology. *Journal Bar International Series*, Vol 931, 351-356.

Hare, M., Gilbert, N., Medugno, D., Asakawa, T., Heeb, J., & Pahl-Wostl, C. (2001). The development of an Internet Forum for long-term participatory group learning about problems and solutions to sustainable urban water supply management In Hilty, L.M. & Gilgen, P.W. (Eds.) Sustainability in the Information Society, *15th International Symposium Informatics for Environmental Protection, Part 2: Methods/Workshop Papers. Marburg: Metropolis Verlag*, 743-750.

Kling, R. & Covi, L. (1995). Electronic Journals and Legitimate Media in the Systems of Scholarly Communication. *The Information Society. Special issue on Electronic Journals and Scholarly Publishing*, 11 (4), 261-271.