

Beyond traditional Web page designs - a communication language between designers and web page developers

José Bulas-Cruz, Leonel Morgado, Pedro Melo-Pinto, Mila Abreu, Helena Lobo, Mário Guedes, Arlindo Santos, Jorge Borges, Joel Bicho, João Barroso, Arsénio Reis.

Projecto GEIRA
Centro de Informática da Universidade de Trás-os-Montes e Alto Douro
Apt. 202, 5001 Vila Real Codex. Portugal
E-mail: jcruz@utad.pt

Alberto Proença

Projecto GEIRA
Centro de Informática da Universidade do Minho
4700 Braga, Portugal.

Several archaeological, historical, or heritage-related entities in Northern Portugal are joining efforts to promote their activities, among local communities, using interactive and multimedia technologies, under the project, GEIRA (URL: <http://www.geira.pt/>). The research team is multidisciplinary, integrating namely archaeologists, designers, multimedia technicians and computer experts. The development of Web sites, to draw the interest of the Internet community, requires an attractive, well thought-out design.

A professional Web-designer is capable of creating such designs on his own. However, such professionals are hard to find, and are sought-out by companies, in the area of multimedia publishing, which places those professionals beyond the financial reach of most heritage-related organisations, such as museums, archaeological parks, and universities. Traditional designers, while highly skilled in conventional technologies (printed media), lack the technical expertise to efficiently implement their designs as web pages and to maintain and manage the graphical aspects of a Web site. Increasingly complex database and geographical information-driven web sites emphasise this aspect.

A mixed team is usually the best option: designers and web-page developers working together [GORMAN, 1997]. This may produce a synergetic effect, using the best of both worlds. However, upon receiving a design, a developer can't grasp all of its design features at once, due to the variable nature of a web page format. Some objects are aligned, but not necessarily – they can float around on the page, responding to changes in the page's dimensions – others are aligned and must stay that way, and others can be moved, but within limits. All the information regarding behaviour, related to the page's variable dimensions, is absent from a traditional design, which relies on fixed dimensions.

These result in problems for the design implementation team which the designer must detect and correct. Sometimes, these errors may go undetected until well after a web site has been published, which, in turn, may result in an unsound dynamic behaviour of the page's elements. This is all the more important, when developing sites for archaeological sites, museums and other heritage-related organisations, that heavily rely on their public image.

The use of available packages can help, but does not solve this problem. These packages, e.g., FUSION, 1997, are oriented towards the development of pages, with well-defined dimensions, and do not support the specification of geometrical dynamic behaviour.

The development of a language, for the description of the dynamic behaviour of web pages, minimises the occurrence of errors, saving time and resources in the development process. It also minimises the probability of placing, on a final web page, graphic elements with unsound behaviour. The language lays a common ground, between designers and developers, allowing for the development of visual tools, that speed up the development process, ensure greater quality, and introduce an element of clarification for the design specifications.

The model for a layout tool is being developed, based on the object-oriented, programming paradigm [MEYER, 1988] [WEGNER, 1990] [RUMBAUGH, 1991] [BOOCH, 1994]. The tool will provide a designer with the means to graphically implement several page elements, as she/he intends them to be, and at the same time, to see how these elements are positioned on the page, for different page formats (width/height ratio). The specifications can then be fully tuned, by the designer, supplying the web-page developers with a much cleaner specification.

The development team will, in turn, be able to use the layout tool to get a much clearer picture of each object's intended behaviour. This will ensure that the development process not only evolves faster, but also, that it generates fewer errors. Overall, the improved communication, between designers and developers, results in a web-site creation process that is more efficient, more economical, and faster. This is relevant for situations, where the amount and complexity of the data requires a well-structured approach. This is the case for archaeological, historical, or heritage-related, Web-site projects.

Some prototype sites are under development and can be found at the following URL's:

- International Rock Art Congress, IRAC '98 – <http://www.utad.pt/actividades/IRAC>
- 3rd Peninsular Archaeology Congress – <http://www.utad.pt/cap/>

- Study on the Panóias' sanctuary – <http://www.utad.geira.pt/panoias/>
- Casa de Mateus – http://www.utad.geira.pt/casa_mateus/
- Museu do Abade de Baçal – <http://www.utad.geira.pt/abadebacal/>
- "Paços da Seda" Project – <http://www.utad.geira.pt/pacosdaseda/>
Museu do Ferro e da Região de Moncorvo:
<http://www.utad.geira.pt/ferromoncorvo/>

An example screen is shown in Figure 1, from the Casa de Mateus site.

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List of Figures in CD-ROM.

Figure 1. Screen of the Casa de Mateus site