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MAKING WEB TOOLS USEFUL FOR WATER PROFESSIONALS

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ABSTRACT : Water professionals and practitioners around the world and especially in developing countries, are urged to develop and adopt innovative practices for better water resources management. A large number of web domains and Internet list-servers have been developed in order to help them in their search for relevant information. The content varies from raw data to specialised technical platforms. But the information is not always pertinent nor gives the answer the people are looking. We have selected five European web domains concerned with water and developing countries, ranging from institutional to independent. We have tried to use these examples to compare their performances and to provide some insight in the way a web domain can better serve the interests and practical needs of its potential users.
KEY TERMS : water, Internet, web, on-line content, information

INTRODUCTION

We have selected and compared different web domains belonging to five European organisations, some large and heavily subsidised and others are independent and small in size : OIEau Office International de l'Eau, IRC International Water and Sanitation Centre, WEDC from Loughborough College in the UK, pS-Eau Programme Solidarité Eau and an online Magazine H2O.net.

This paper proposes taxonomy for characterisation of web domains using the criteria of end-use or target group. The criteria reflect two different approaches and are not really independent. The end-use includes mainly replication of a good practice, training, consultancy, general information (news, event calendar etc.) or proposal writing (call for tender, bidding documents, etc.). The second criteria is the type of user group targeted like policy makers, project managers, research & education, consumers or others. The geographical focus like Europe, Africa or rest of the World should be considered at this stage. Finally, web domains differ by their degree of interactivity of their functions and features. The interactivity is rather an ergonomic than taxonomic criteria and should be considered apart. The paper looks at how each of these organisations makes use (or not) of the main advantages of Internet (presence of the international community, instant sharing of textual and visual information, potential to pace a learning process to best fit).

WATER ON LINE

The different sites have been chosen on basis of the role they tend to fulfil on line. On one hand we have searched for European website concerned with water, if possible applied on developing countries and on the other hand we have chosen for independent sources which possess an established international auditorium. For this reason governmental agencies and companies websites were kept out of the selection.

We confirm that the taxonomy of the websites of OIEau , IRC and WEDC is based on our observation and may differ from the definition of their designers. The qualification of the pS-Eau and H2o.net is a result of cross-examination. The table below try to give a resume of the different characteristics, which will be developed further below.

Table 1: The description and taxonomy of some important European websites concerned with water, if possible focused on developing countries.

Web site	Description (as stated on line)	end-use	target group
OIEau (www.oieau.org) International Office for Water	OIEau is a non-profit federation of actors involved in water resources management and protection hosting International Institute for Water Administration, National Centre for Water related Information and Documentation, National Training Centre for Water Professions.	general information, training, consultancy,	policy makers, government at all levels, (water agencies), all water professionals (water supply companies), research & education - France, world
IRC (www.irc.nl) International Water and Sanitation Centre	News and information, advice, research and training, on low-cost water supply and sanitation in developing countries	general information, training, consultancy,	policy makers, research & education, government at all levels, international organisations - developing countries
WEDC (info.lboro.ac.uk/ departments/cv/w edc/) Water, Engineering and Development Centre	Education, training, research and consultancy for improved planning, provision and management of physical infrastructure and services for development in low- and middle-income countries, focusing on the needs and demands of the poor.	good practice replication project information, training, consultancy	project managers, research & education, donors, all organisations using consultancy - developing countries
pS-Eau (www.pseau.org) Programme Solidarité Eau	Network for dialogue and exchange between the different stakeholders of the water sector, with final objective to promote better water supply and access to drinking water in developing countries.	good practice replication general information, proposal writing	policy makers, government at all levels, international organisations, project managers, NGOs, donors - mainly in Africa
H2O (www.h2o.net)	H2O.net is a non-profit web magazine (monthly issue), dedicated to water, treating topics varying from research to politics.	general and specific information, consultancy	research & education, consumers, all individuals needing objective water information - French speaking countries

None of the sites is mentioning explicitly the end use or the target group nor giving their statistics. This makes it for us difficult to see whether the original objectives are achieved or not. Table 1 remains therefore more illustrative than explicative. The description are taken from the websites themselves. The end-use and the target group were estimated by our care and therefore may be in discordance with the objectives displayed on-line.

Globally we can say that none of the websites proposing training offer the possibility of an on-line exercise. Even if distance learning is possible it's done by the classical way of exercise- and fact sheets

send by post. Nevertheless all of them propose training in their centre or abroad on-site. The reason for this "under" exploitation of the Internet possibilities might be the high development cost of (interactive) on line training combined with the novelty of e-learning in the developing countries. Nevertheless some specialised centres in South America and in Asia have experience with e-learning in the water.

The site of OIEau is the most complete, though the exploitation of the content may be the most difficult one. The website have two main parts, documentation and training, but also a lot of sub-domains with different design, specific targets and management apart. The navigation does not seem very clear, especially because no new window opens. This is true in less extend for the IRC website as the navigation is clear.

Table 2: The characteristics of some important European websites concerned with water, if possible focused on developing countries, summary of our observations.

web site	language	size frequency	web tools	feedback	positive or negative points
OIEau	fr, uk, sp	not received	data base search, sale, links, download	contacts + ??	+ diversity + multilingual - ergonomy
IRC	uk, fr, sp	45 Mb 17 000 /month	site search, sale, document search, member space, mailing- list, download	contact + stats	+ document base + networking
WEDC	uk	not received	site search, links, mailing-list, download, list server (?)	contact + ??	+ database - update
pS-Eau	fr	10 Mb 1 000 /month	site search, data base search, links, download	contact + stats	+ multi-criteria database
H2O.net	fr	25 Mb 10 000 /month	site search, sale, member space, forum	contact + stats	+ image + news

Table 2 resumes some of the specific features of the reviewed websites. The data are only exact for the websites, which have replied to our demand for information. For the websites of OIEau and WEDC they are estimation as far we could verify on-line and may not contain all features present. The IRC gives access different water related websites and the size and frequency resume all of them.

Most of the website reviewed propose to download information in word processing format (.doc) or as Adobe® portable document (.pdf). A pdf file is de facto a standard for electronic document distribution which preserves all the fonts, formatting, graphics, and colour of any source document, regardless of the application and platform used to create it. It can be viewed and printed exactly as intended protected from modification, that's why we think the latter should be preferred. The downloading is the most easy and cheap way to get valuable information. However in developing countries the time to download and the cost of printing could be a disadvantage. The solution for these countries may be a free distribution on CDRom.

In general the websites range from interactive & demand-driven to more consultative & supply-led. None of the sites we have focused on exploits fully the design possibilities of the web. Most of the information is in typed form absent of any graphic stimulus. The paper to web transfer is still more a photocopy than adaptation to a new medium, but there have been made a lot of progress since the last two years. Neither, none of the websites applies fully the technical possibilities. We couldn't discover any news forum or another platform for direct exchange of experience. We are not directly asking for a chat-room but in some cases a list server is quite useful. Unfortunately its installation and moreover its management

are quite work intensive. We are aware that in some case the choice of simplicity is given by the technical restrictions the end users may meet.

We appreciate the large amount of information of the OIEau, but we find us a bit lost. Looking at databases the IRC have the most valuable one of published and unpublished literature concerning water and developing countries, but the multi-criteria database of pS-Eau may be the best tool for project preparation in French speaking Africa. The H2o.net is the most pleasant to review due to the presence of a lot of image of good quality. For regular news in French from over the whole world the H2o.net may be the best choice, but in English the IRC is the winner.

HOW TO USE WEB TOOLS BETTER

For optimisation of websites we suggest the following check up :

- 1) definition of end use or target group
- 2) structure and accessibility of information (ergonomy)
- 3) objectives to achieve (amount of information transferred)
- 4) availability of means to achieve the objectives fixed (financial or technical)

The definition of end use or target group determines the intrinsic structure of the information or how it should be presented. Policy makers need easy access to knowledge or vulgarised information contrary to technical or scientific practitioners.

Not only the quality of the information is important but also its presentation and its accessibility. Lets have in mind that information difficult to find is equal to lost information. It doesn't make any sense to put it on line if it remains untraceable. On the other hand dense information difficult to read invites to skip to the end. Make the lines shorter and don't put ten pages to scroll. Let's use hyperlinks to divide and structures the information. A good graphic can tell us in a second a lot more than one page of text.

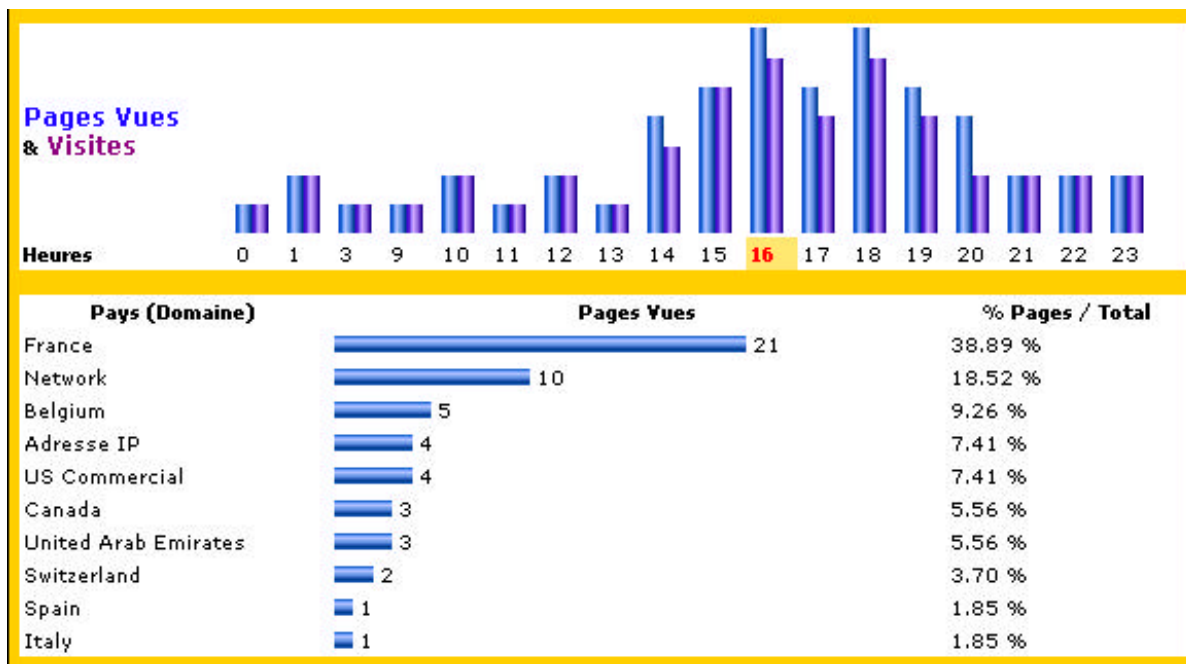


Figure 1: Use of webstatistics, number of pages viewed and origin of visitors (©Estat)

A graphic does not necessary mean more kilobytes and a longer loading. Use optimised JPG format, dimension and compression according to your objectives. The comparison with indexed GIF format shows that for typography and simple colour graphics the GIF format is "lighter" and thus loads faster. The white is not the only background colour available on the web, but fantasy backgrounds and buttons not only disturb our attention, make the text unreadable but also illustrates the absence of professional website management. Creating a website is more than just putting a piece of text online.

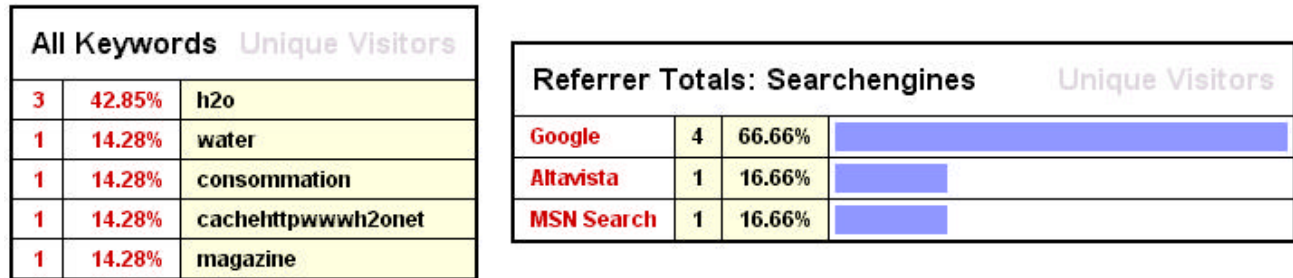


Figure 2: Example of web statistics, the use of key words and search engines (© eXTReMe tracking)

The presence of goals or objectives to achieve stimulate the dynamics of the website either by direct feedback with the end users or by the use of web statistics. Direct feedback can be obtained by e-mail or by automatic forms collecting the information necessary. The indirect form of feedback are the web statistics. Web statistics are very powerful tool to examine the audience of the website. It's not only giving information about the number of visitors or the number of pages visited but can reveal also which page and even how long was reviewed. We can also estimate the origin of visitors using the geographical position of the IP addresses like .fr for France (figure 1). Nevertheless the use of neutral extension like .com, .net and .org diminish the value of these data. Probably the most interesting data are the keywords or the search engines used. With these tools we can see how the users arrive on our site, which kind of keywords and search engines they are using. The search engines are not only reading through the plain text but also through the so-called "Meta names". This information is hidden by the browser but coded in the "html" source and available for search engines.

Table 3: Examples of ranking of selected websites in 3 search engines (United States based). The search term used is the name of the website.

website	Oieau	IRC	WEDC	PsEau	H2o
Google.com	1	4	2	1	3
Altavista.com	1	6	>10	>10	1
Hotbot.lycos.com	1	>20	1	1	20

Table 3 shows the search results for different search engines if the website name is used as search term. The difference can be explained by the search terms. Both "h2o" as "irc" are frequently used for other sites and are more common than the French terms "oieau and "pseau". This ranking may be better in a language specific search engine, especially for the French websites.

We think this demonstrates sufficiently the importance of appropriate web design. But appropriate web design is work of professionals and cost effective. The development of new features demands often the use of new on-line technologies not available to every web user. To give an example viewing pdf - files demand the Acrobat Reader (Adobe), viewing of Flash (Macromedia) animation requires the flash plug-in for the browser. A simply viewing of a large amount of images requires a fast connection. The state of

technical performance of a given web site might be therefore be a political choice or simple inadequate budget for web developing.

CONCLUSION

We think that websites concerned with water don't have any need for specific webtools. We consider that none of the websites reviewed is fully optimised. This may be a technical or financial choice. Globally we could establish the absence of discussion space, graphical enhancement and more developed form of interactivity. The information on line varies from valuable to very useful, however we couldn't find any specific information for proposal writing. Some sites with a lot of information have a lack of good ergonomoy that makes the data "unreachable". The importance of feedback from users and possible tuning of the web content could not be established as lack of response from the webmasters and remains an interesting point to develop.

Appropriate use of new technologies like graphics or animation can illustrate and emphasise the contents but an inappropriate use like "funny" pointers, animated logos or special Java ® effects can only disturb the users. All sites reviewed don't fully profit of the web possibilities. Managing a website is a work of web professionals, but developing a website is collaboration between water practitioners and web experts. The content and the target group can only be defined by water professionals, but the visual aspects and the navigation or ergonomoy are the job of web designers. A joint editorial committee should be the key of success. To fully understand the possibilities and the constraints of the medium Internet a short training for the water practitioners is indispensable. The web is a lot more than a piece of electronic paper.

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