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WWW.FLOODSITE.NET: Using the web for research dissemination, team building and project management

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WWW.FLOODSITE.NET: USING THE WEB FOR RESEARCH DISSEMINATION, TEAM BUILDING AND PROJECT MANAGEMENT

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FLOODsite is an Integrated Project under the EC 6th Framework Programme and comprises over €14M of research work being undertaken by 36 partners, drawn from 13 different countries. Management and implementation of the project is particularly driven by the complexity and volume of work, the number and distribution of partners and the variety of target/stakeholder groups. Use of the web as a management and implementation tool seemed the most effective approach. From the outset, three core objectives of the website were to facilitate research dissemination, team building and project management. A range of web tools have been developed and applied during the past 2 years – some successful, some not so effective. Fundamental to their effectiveness is their functionality and usability. This paper provides an overview of the web based work within FLOODsite, highlighting the concepts applied and giving examples of approaches and tools that have worked well and some that have not worked so well. These findings should be of value to any project manager considering how to make effective use of the web for facilitating large technical projects.

What is FLOODsite and why develop a project website?

FLOODsite Project is an Integrated Project under the EC 6th Framework Programme and comprises over €14M of research work being undertaken by 36 partners, drawn from 13 different countries. The project presents many technical and management challenges. The approach to management and implementation of the project is particularly driven by the complexity and volume of work, the number and distribution of partners and variety of target and stakeholder groups. In addition to project management and team communication for a large and remote project team, a primary EC objective is effective dissemination of research. A web based approach offered solutions to all of these factors.

What does the website need to do?

Before planning and building the FLOODsite website we first needed to have a clear and common understanding of what we were trying to achieve. To establish this, we needed a good appreciation of what our end users would need from the website. For FLOODsite, the end users were identified as the project management team, the project research team, the project Client (EC) and the external user community (public, professionals etc.). Three core objectives for the website were identified as to facilitate:

1. team building and communication
2. project management
3. research dissemination

An integrated approach for web design and project image

The need for the project to establish a clear image, and for any website to fit within that image, was identified from the outset. The value in adopting this approach for all project media included the following:

1. team working is encouraged and reinforced through use of common materials
2. a clear and distinct project image promotes a professional approach to the work and reinforces the perceived quality of output
3. all outputs in a common design style ensures quick and easy identification of material source

Key concepts

Before discussing our experience with the FLOODsite website, it is appropriate to define our understanding of some key words. By the word "intuitive" we mean that the particular feature or function concerned is constructed so that its use and interpretation follows the general practice of most websites. This enables us to capitalise on the experience and understanding of users. Another aspect of "intuitive" is that information is stored in a way that most people expect to find. However, it is here that we pick up divergence of working experience and approach and find what is "intuitive" for one person is not necessarily so for another. It is critical for our success that we embrace such diversity.

By the word "tool" we mean some functionality of the website to record or give access to information about the project. Thus our tools include submission and retrieval of information from a document management system, a meta-database on our case studies, a searchable record of project personnel with their roles and public external access to selected information on the project etc

Choosing the best approach for implementation

Having established core objectives and an integrated approach to project image, web design etc. we then looked at options for implementation. Two approaches emerged: firstly, to adopt one of the growing number of information management systems to host web content or secondly, to develop bespoke tools specifically for FLOODsite.

'Off the shelf' information management systems versus bespoke web based tools

A review of 'off the shelf' information management / project management systems shows an impressive array of software packages most of which offer tools based around a core document management system. Many of the tools offer very complex document management, email tracking etc. However, draw backs to using these packages include:

- limited ability to mesh a project image around and into the system
- inappropriate structure of web interface (e.g. headers, pages not relevant to the FLOODsite project)
- inappropriate complexity of tools (i.e. too complex document management tools, too basic communication tools etc)

A fundamental problem with this approach was the taking of pre-designed tool packages and 'squeezing' it to try and meet quite specific project needs. The match, for FLOODsite type needs, was generally not felt to be good! In addition, and more importantly, feedback from a range of EC project managers using such tools all concluded with the same problem: that the tool would be good for their needs if they could encourage their project partners to use it. The conclusion to be drawn here is that if people do not use your web tool (for whatever reason) it does not matter how complex, simple, cheap or expensive those tools are. The following drivers may then be concluded as essential for an effective tool:

1. Partners make use of them (implying that there is a need to use and value to be gained in using them)
2. That they are simple and intuitive to use
3. That the tools can be achieved within an acceptable project budget.

Since all three drivers could be achieved through the development of bespoke tools whilst also avoiding or minimising the drawbacks identified for off the shelf

systems, the FLOODsite project decided to adopt the bespoke design approach.
The drawback to developing bespoke tools is the work involved in developing, testing and deploying such systems. However, the overriding benefit (in addition to those detailed above) is the ease with which the tools may be focused and adapted to very specific needs and user responses. Since the greatest risk to achieving an effective web tool appears ultimately to be lack of use by the planned end user, the ability to develop and adapt specific applications becomes paramount.

Design for greatest use

One of the hardest challenges in developing the bespoke tools is to develop something which is simple and intuitive, whilst also being effective. Achieving this can be particularly difficult when you appreciate that what is intuitive for one person is not necessarily so for another. Equally, what may appear intuitive one month may also appear more or less intuitive at a later date. To achieve widespread and continued use of a tool requires clear objectives, demonstrated value in use and as simple a structure as possible.

A key set of rules which provide some basic steps towards achieving effective web tools include:

- The tool must offer something of value to the user. A use will not spend time or persist in trying to use a web tool unless there is a good reason for doing so.
- Mouse clicks required must be minimised. Interest is typically lost within a few clicks – particularly where it becomes obvious that a better design could have avoided such effort.
- The tool should provide, or at least appear to provide, results quickly. Long waits and online effort without visible success will result in lost interest and lost users.
- The tool must be intuitive to use. Non intuitive design makes the user struggle. Feeling uncomfortable online will lose users. Intuitive to use also means consistent with the style and design of the rest of your website.
- Guidance and instructions must be available, but few people will ever read them! When read, they need be very short, concise and effective. A well designed tool should steer the user without the need for detailed instructions.
- A tool should anticipate and cope with users who fail to read instructions clicking options to see what might happen. The tool must be child-proof!

What have we done within floodsite? [www.FLOODsite.net]

Project image

Our first task within FLOODsite was to develop a clear project image and to apply this image across all project media (e.g. to the project website, brochures, posters, report templates, CD ROM design, PowerPoint presentations etc.).

Team member tools

A website structure has been developed iteratively over the last two years, to meet the three core objectives of facilitating research dissemination, team building and communication and project management. This builds upon experience gained in other EC research project websites such as for IMPACT [2], CRUE [3] and HYDRALAB II [4].

The site divides into three user group areas, namely public, team member and administrator. Access and content availability is based upon individual user profiles (i.e. role in project) and the required circulation of material (to specific user groups) (Table 1).

Table 1 Summary of core website content

Public Area	Team Member Area	Administrator
Project overview	Meetings & events	Controls on team member registration (security)
Work programme & links	Team contact information	
Meetings & events	Guidance procedures & templates	Sending public and team member emails
News & Publications	Contract documents	Workshop tools: - Registration - Programme / schedules - delegate data extraction - delegate email
Registration for eNews	RIPs & Work Schedule	
Sitemap	Progress reporting	
	EC Annual Reports	
	Project Documents	
	Project Data	
	FTP Exchange Area	

What worked well & not so well?

Successes

A few of the tools and techniques adopted have worked well from the outset. These include the adoption of a clear project image and tools for meetings & events, progress reporting and to aid workshop planning and implementation (Figures 1 & 2).

The Meetings & Events pages have worked well since the tool allows for documents to be attached to the meeting entry. Since many people associate material such as reports, presentations etc. with meetings, this mirrors the way in which people will think when trying to recall where a document might be. A simple search engine and click to access material means minimal effort to access material directly.

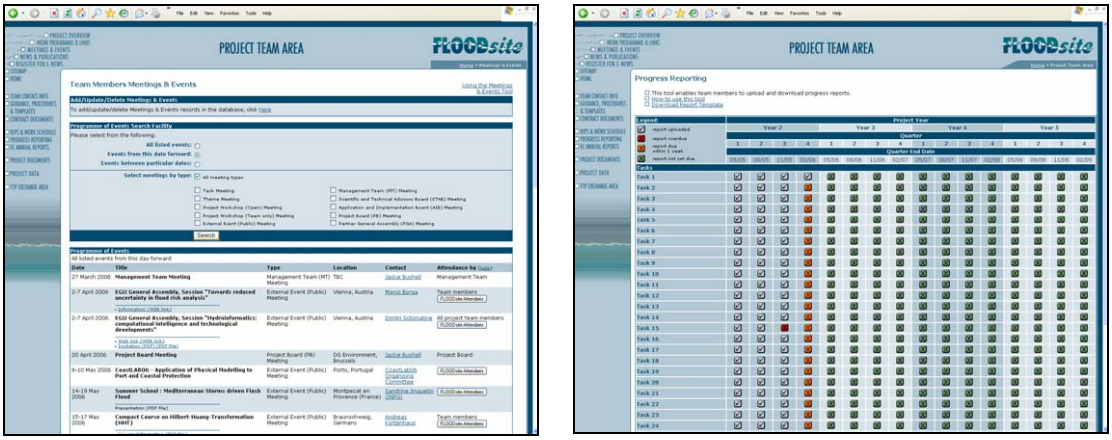

Figure 1 Meetings & Events and Progress Reporting web pages

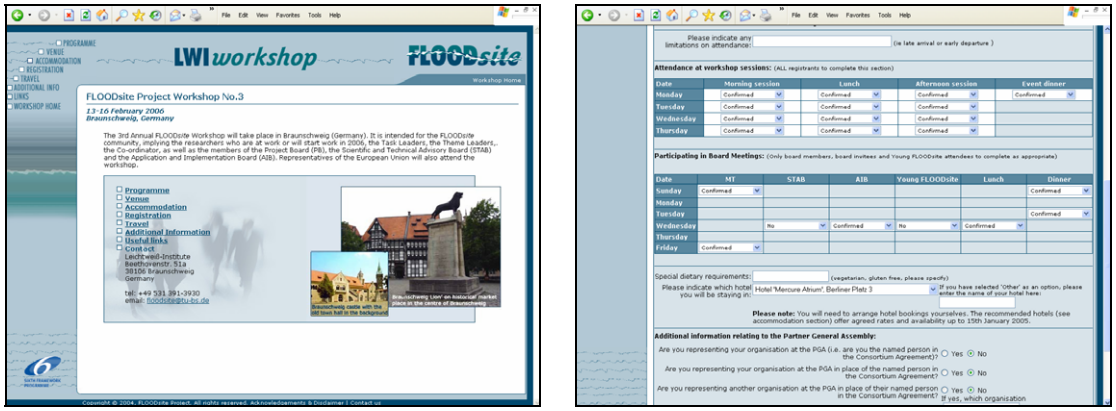

Figure 2 Workshop web pages

The progress reporting tool works well primarily because of its simplicity to use. There is little motivation for team members to use this, since the majority of value is gained by the project management team. As such, a simple tool that required little effort for users was essential. This tool uses a combination of visual cues: colour coding, ticks and crosses to identify where reports are due, overdue or submitted.

The workshop pages allow for online registration, including details of sessions to be attended. Administration pages allow for easy updating of the programme, scheduling of ad hoc task team meetings and extraction / manipulation of any registration data to support workshop management (e.g. emails, attendance lists, name badges, partners not attending etc.). Tools developed here are evolving through experience gained from use on each major project workshop.

Evolving…

There are additional tools are also working well, but which continue to evolve in an attempt to make use more intuitive and tailored to specific needs. Examples of these tools include the Team Contact Information tool and Project Document System.

The Team Contact Information tool is a system for storing all team member contact details which includes specific information about member roles in the project. This information allows users to search and identify specific task team members, board members etc. (Figure 3). The challenge with this tool is in refining the user and output interfaces. The basic concept for this tool is good - the information is useful for the team members and also takes responsibility for maintaining up to date information away from the administrator and back to the individual team member. However the search interface can be confusing and the format of results output does not yet match the way in which researchers are thinking. An apparently simpler search interface along with a more flexible output format is required.

Success with this tool remains to be seen. Uptake has not been quick, but is beginning to grow. Since this tool only offers value to users when a significant number of team members routinely use it, it remains to be seen how much effort people are prepared to put into the tool before seeing value back. If wider use has not been achieved within 6 months, it is unlikely that this tool will ever be effective in this situation.

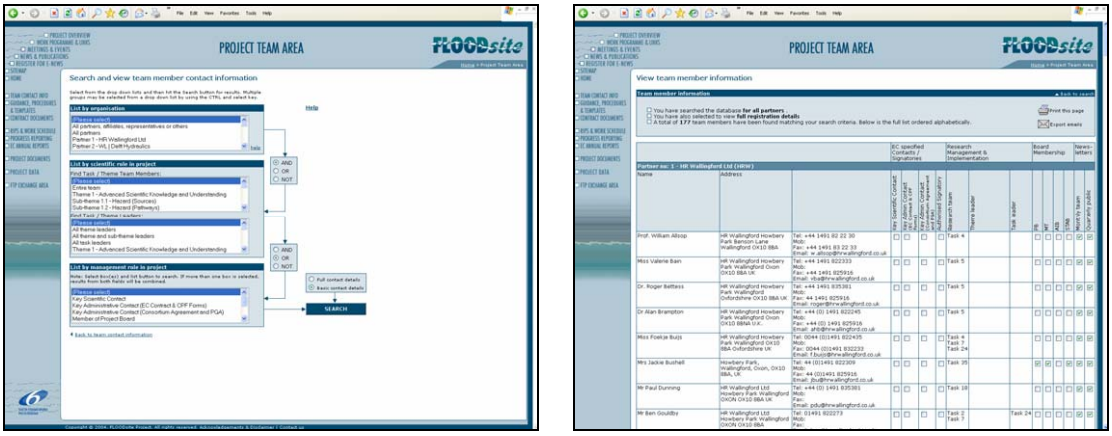

Figure 3 Team Contact Information web pages

Not working so well?

A key challenge that has arisen for the FLOODsite project is ensuring that simple, easy and intuitive access to information is maintained as the project website evolves and expands. At the outset, when content and tools were comparatively limited, an effective structure was established and feedback suggested that users found the site relatively easy to use and navigate. However, two years on and with considerably enhanced content and tools, the feedback suggests that it has become much harder to locate required information within a few clicks of the mouse.

This loss of simple, intuitive use appears to have arisen as a result of increasing the range of tools and content, so widening the range of choices for users and making navigation more complex. Given that usability and simplicity are key to effective web use, it is now essential that the structure and content of the site is reviewed and modified to meet the current needs of the users. Solving this problem requires an understanding of how 'intuitive use' varies quite significantly from person to person. This subjectivity and the tendency of perception to change over time, requires the website to have multiple pathways for users to access the same information and tools. Understanding and mapping these routes will be part of the development process which will be undertaken during the Spring and Summer of 2006.

Conclusions so far…

A successful website is one that achieves the original objectives for the design. Whilst a website might look professional and contain a range of apparently useful tools, it will be a failure if the intended users do not use it. Overcoming any programming issues in developing a tool is simply an initial hurdle; ensuring an intuitive, simple and usable design is the main challenge. Failure to achieve this is a common problem for many websites and web tools developed to facilitate technical / research project work.

When developing such websites it is therefore essential that careful consideration is given to the needs, goals and ways in which the intended users will use the website. Web tools will not be used where the system is unduly complex, slow or time consuming or does not give the user an immediate benefit (i.e. reason for using). Typically, the content and structure of such websites will grow and evolve during the lifetime of the project. This must be recognised from the outset along with an acceptance to restructure and refine the content and routes for access as needs change and evolve. It might be instructive for progress on HCI to review our experiences and produce guidelines at the end of FLOODsite for the benefit of research management of the next generation of EC projects in FP7.

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References

1. Morris M W., "The FLOODsite Project website", Report T32-05-01, Interim draft. The FLOODsite Project. EC FP6. GOCE-CT-2004-505420.

2. www.IMPACT-project.net IMPACT – Investigation of extreme flood processes and uncertainty. EC FP5 Project. EVG1-CT2001-00037

3. www.crue-eranet.net CRUE – Flooding ERANET. EC Project. ERAC-CT-2004-515742

4. www.hydralab.org HYDRALAB II – Infrastructure network project.

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