

B9. Developing Project Management Skills: Building a usable, accessible website for the Lower Severn Community Flood Information Network

Nina Reeves and Paul O'Brien

Aims

The production of multimedia, computer-based applications to address business and organisational problems is a well-established discipline area within the more general area of Computing and Information Systems and encourages students to engage in live projects with real world clients. One of the aims is for students to undertake a variety of project management roles in with tutors playing the senior management role in order to prepare students for their future professional careers.

The client for this activity, the Severn Community Flood Information Network, allowed the students, in addition, to learn about sustainable flood risk management as the knowledge domain area to which they could apply their technical and design skills. The activity involved the creation of engaging and informative web-based resources for members of the community to interact with and to which they could contribute. This also involved understanding how to create web sites which are compliant with the Disability Discrimination Act (1996) so that the resources would be accessible to as wide a range of community users as possible.

The activity also enabled cross-university collaboration in the area of sustainability and students had several opportunities to communicate their understanding and technical expertise to different audiences through public exhibitions.

Note that the overarching project aims for the Severn Community Flood Network are contained in Prof. Lindsey McEwen's case study (q.v.). Prof. McEwen was the client for this project.

Rationale

The students were all registered on a Higher National Diploma (HND) Multimedia Information Technology (IT) which covers a range of general IT skills as well as specialised skills in multimedia applications. These involve the use of a wide variety of software to capture and edit media such as images, audio and video, together with aesthetic design and technical programming skills. To achieve usable, effective multimedia applications it is important for students to develop the ability to work at a variety of levels in interdisciplinary project teams (England and Finney 2002a). With this in mind, the second year of the HND programme includes a compulsory module of 30 CATS points entitled Group Project. In addition, all validated programmes of study at the University involve a requirement to cover issues of sustainability and these are articulated in the programme specifications and the module learning outcomes.

In the past, external clients have worked individually with a small student project team and the work has been assessed, in part, with a presentation to tutors and the client. It was felt that this lacked a certain level of realism since a project team usually works within the context of a larger organisation. Also, the conduct of real life projects often means that a team member may have a primary responsibility but also a secondary role to provide some contingency in case of absence, so that a project can be completed to time and budget (England and Finney 2002a).

When the leader of the Lower Severn Community Flood Information Network project approached the Multimedia tutors, they recognised an opportunity to make the Group Project an active learning experience that involved the students in community engagement beyond the University. From a knowledge domain perspective, students would have their awareness of the issues of floodplain management raised through collecting and editing the supplied media. This included, for example, textual descriptions, maps, aerial photography and video as well as first person interviews with local residents of the Lower Severn Community. Students could take the opportunity of participating in the Severn Community Flood Forum (National Science Week March, 2006) in order to collect usability and accessibility data on their product. Here students would have the opportunity to gain first-hand experience of the needs of the ultimate users of their system. Overall the project should allow students to develop as active citizens with a strong sense of both the wider implications of their project and the importance of effective communication in capacity building

in a sustainable development context. This contributes to the principle suggested by Martin (2006) that the habits developed at an early stage in designers' careers are likely to stay with them, so it is important that awareness of issues of sustainability in the community are raised in the context of professional practice.

Implementation

The student group comprised eight HND level two students who had completed web design modules giving them skills in web authoring (*Macromedia Dreamweaver*), graphics manipulation (*Adobe Photoshop*), video capture and editing (*Adobe Premiere*), audio capture and editing (*Audacity* freeware) and 2D animation (*Macromedia Flash*). They had already worked in small teams to produce a website for an accommodation letting company where they had had limited contact with the client. The general characteristics of the group were typical of HND students, having modest academic qualifications at entry and tending to be the first generation of their families to participate in higher education programmes.

To create a realistic situation, one Multimedia tutor played the role of Chief Executive Officer (CEO) of a Web Design Company and another took the role of the Senior Project Manager (SPM), who would, in a real world situation, have the oversight of several projects (England and Finney 2002b). The project lasted from October until June with the day-to-day project management carried out by the students. The CEO and SPM created descriptions of several roles which would be needed in the team and for which students then applied and were interviewed in a realistic setting. Based on their skills and the interview, each student was then allocated a primary role and a secondary role where they would be shadowing the primary role holder. Roles included Project Leader, Media Asset Manager, Graphics Designer, Video Editor, Audio Editor and Flash Developer among others (England and Finney 2002b). The brief was specified on the module website which held all the documentation necessary at the start of the project such as the client brief and list of media assets to be provided.

The SPM met weekly with the team and encouraged them to use project management tools such as Gantt charts, media asset management tools and the team support tools within *Dreamweaver*. The students created a project website where they stored edited assets, meeting documentation such as agenda and minutes of meetings and this was available for the

SPM to check periodically. Milestones were marked by a presentation to the CEO and SPM prior to presenting to the client. The students appreciated the ongoing interest and commitment of the client. This follows good practice in industry where quality review is on-going and client-facing skills are key to the sustainability of the client base.

The prototype website was presented at the Lower Severn Community Flood Forum (March 2006 in Tewkesbury) where students asked visitors to use the website and complete a usability questionnaire which allowed them to engage with the potential users of the site. This was an important learning outcome for the students and several design changes were made as a result. When a further opportunity to exhibit to members of the University governing body and guests presented itself, the students were able to participate with little input from tutors. In the final year Multimedia Show MUX06 (May 2006), the student team presented a stand in a confident manner that compared well with the final year degree students thus indicating the transformative value of this extended project activity.

This activity could be replicated in a variety of settings encouraging student interaction with community members in capacity building around a 'live project' with particular sustainability themes. Feedback from both students and community members was that they enjoyed and benefited significantly from the experience.

Sustainability focus

Students had the opportunity of engaging with the media describing and explaining the environmental and social aspects of sustainable flood risk management and flood risk science. The project allowed the students to fulfil the University's commitment to embed learning within the community and to link this, wherever possible, to enhancement of the student learning experience. In addition, this extended project provided students with the opportunity for personal development in terms of group working in a community setting within the context of developing their technical skills.

Active learning

Students had the opportunity to engage with a wide variety of interest groups, organisations and individuals with differing age, social economic status and education. Students used the opportunities provided by exhibiting their website at the Lower Severn Community Flood Forum to collect quantitative and qualitative usability and accessibility evaluation data

via questionnaire and interview. This gave them a clearer understanding of how members of the public would like to use the web site to find out about the environmental and social aspects of sustainable flood risk management and flood risk science. It also allowed older members of the community to engage with the new technology in a supportive environment on a one-to-one basis and to engage with the University and its students.

Feedback

Feedback on the module from students *via* the standard questionnaire and focus group was very positive in terms, not only of what they felt that they had learned but also in general enjoyment and 'fun'. Having felt somewhat intimidated by the formal structure and role definitions at the start, they commented that they saw the benefit when they experienced the positive feedback from members of the public at the Tewkesbury Flood Forum. When they compared their product to others at the end of year Multimedia students' exhibition, they were 'proud of what we've done'. In fact, their confidence was such that all members of the group decided to continue studying at Level 3 for a BSc degree in Multimedia, which is a very positive outcome in the tutors' opinion.

The client was clearly very enthusiastic about the product produced and the process and this has given rise to another project in the area of sustainability using multimedia. Feedback from community members was that the testing of the web site was one of the highlights of the Community Flood Forum.

Strengths and weaknesses

The strengths of this activity relate both to the personal and professional skills development of the students and their knowledge of the environmental and social aspects of sustainable flood risk management and flood risk science.

In particular, the project allowed the students to develop a wide range of project management skills within the context of a relatively large team for a university setting. The potential weakness of the team dividing into sub-teams with little communication due to personality conflicts was countered by the formalised structure emulating a typical professional setting.

A potential weakness was the amount of tutor time entailed in the initial set-up of interviewing, persuading and in some case cajoling students to

engage wholeheartedly with the sustained level of work necessary in a project of this nature. The results later in the year, however, amply illustrate the 80:20 rule of systems project management.

Programmes

HND Multimedia Information Technology

Key words:

Project management; usability; accessibility active learning; community; participation; flood risk

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Contact:

Nina Reeves
The Business School
University of Gloucestershire
The Park
Cheltenham
GL50 2RH
UK
+44 (0) 1242 714261
nreeves@glos.ac.uk