

# Design Case: Building Community in a Design Effort in a Decentralized, Individualistic Setting

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## ABSTRACT

WebFeat is a web development effort by about 40 students, faculty, and staff in the College of Engineering at the University of Washington. The University is a decentralized organization with diverse goals and constituencies; the culture emphasizes individual autonomy, individual initiative, and individual responsibility. In this design environment, the challenges of building community among the members of the design team are substantial. We devised a suite of numerous tools and processes designed to foster a sense of community and participation in the current development process, as well as to lay the groundwork for participatory maintenance of the site in the future. Developers in other similar organizations may find this suite useful.

## Keywords

World Wide Web, participatory design, collaborative design, inductive data analysis

## INTRODUCTION

The current UW College of Engineering web site is the result of a development process very typical of decentralized organizations: the web site emerged from the vigorous but uncoordinated bottom-up development of many individual and unit web sites, with the later imposition of a top-level "umbrella" site that attempts to provide overall organizational identity, a degree of consistency, and efficient navigation for the web site as a whole. The umbrella, however, scarcely conceals the lack of coordination among the individual sites.

Upon her arrival last year, the new dean of the College launched an effort to reconceive the web presence of the College. The result was WebFeat, a large-scale web-development project, headed by Ramey and Farkas, that involved about 40 individuals (College

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faculty, staff, and students) for the first six months of this year. The WebFeat team built an information design and organizational framework for each of six participating units in the College.

Beyond solving our local design problem, we also set out to devise and test a web-development suite designed specifically for use by decentralized, individualistic organizations with diverse goals and constituencies.

## Overview of the project

The WebFeat participants had to design and build websites for six distinct units in six months. To do so efficiently, we organized ourselves into seven teams: six "unit" teams, one for each participating group (Civil Engineering, Bioengineering, Materials Science and Engineering, Electrical Engineering, Technical Communication, and the Office of Academic Affairs), and a "core" team that supported the other six.

Each unit team defined the unit's constituencies, the goals the unit wanted to achieve with each constituency, and the informational needs to be met. They devised, built, and tested the organizational and navigational structure of the site and supplied working, finished pages for at least the top two levels of the site.

The core team addressed issues of site theme, identity, and overall look and feel, as well as basic technical choices. This team researched and analyzed design ideas and guidelines as well as relevant technical information. The core team interacted closely with the unit teams.

The permanent product of the core team is a Design Website offering design elements (templates, grids, buttons, logos, etc.) for use by others. The goal of the core team was to ensure overall design and technical sophistication for the entire project and to achieve a reasonable degree of consistency and an overall organizational identity across all College web sites.

One of the outcomes of the project is a sustainability plan for the continuing development of the sites by the units themselves. Our goal is to empower the units,

contribute to their sense of site ownership, and prepare them to maintain and upgrade their sites.

### **Cultural constraints on development**

With a large project team, it is always challenging to develop and maintain a common focus and sense of shared mission. But we faced a number of additional constraints that arose from the modes of operation and culture of our setting.

In the University setting, projects like this one are effected primarily through student work. Of the 36 people serving directly on the seven teams (six unit teams and the core team), 25 were students who were taking part for academic credit. These students committed themselves to work some number of hours per week ranging from six to fifteen; the actual timeslots had to be fit in around class schedules and outside demands on their time. Each student's schedule was different from the others and somewhat inflexible (in that classtimes are fixed). Given these constraints, the teams spent at most two hours per week together, working as a team. The rest of the time each team member individually pursued some task or set of tasks.

These circumstances exacerbated the basic centrifugal forces at play in team projects in the University setting (and similar decentralized, individualistic settings). Students have come up through a schooling structure that looks for and rewards individual effort and "original" student output. (Remember that in the schools, at least historically, the more common term for collaborative work was "cheating.") The culture has not really supported development of skills in and instincts for coordination of effort, intra-group communication, and meta-discourse to resolve ambiguity or conflict. Radical individuality is more nearly the rule. We realized from the beginning that we would have to draw on team-building techniques to counteract this instinct among the students to go it alone.

The centrifugal forces at work in the University are if anything stronger when it comes to the faculty. For faculty as well, the university culture emphasizes individual autonomy, individual initiative, and individual responsibility. As a result, a large research university like ours can more nearly resemble a consortium or even a huge collection of sole proprietorships. Each faculty member has extensive control of his or her funded research programs and facilities, laboratories, classroom activities, etc. The natural affiliations of the faculty members are more likely to be with their peers around the country and the world than with their local departmental colleagues. As a result, it is very hard to persuade University faculty to devote their time to a collaboration that does not offer them any obvious return from the point of view of the traditional reward system for faculty in a research university. If this was true now in the initial development phase, it is likely to be even

more true when the initial development is over and maintenance begins.

The culture has also influenced the faculty's basic instincts about what a web page should be. The current departmental web sites are somewhat "faculty-centric"—a good percentage of content consists of pages created by individual faculty members to describe their own research labs, projects, and publications. Most faculty members are indeed extremely interested in the accuracy and currency of their own web pages; but they don't have great interest in the web page for the corporate whole of which they are one part—the department. Thus a major result of the centrifugal forces of individuality in the university is that a main organizing principle is people rather than topics. One result for visitors to the site (like prospective students) is that they cannot get a clear overview of what is going on in the unit. Another result is that there is no unifying look and feel—each page has been designed in keeping with the individual aesthetic and logic of its designer.

To counterbalance these cultural forces among the faculty to the extent possible, we had to develop tools and processes to increase faculty participation and sense of community in the departmental-level web site. Thus our challenges in this design effort fell into two major phases: developing community among the members of the development team itself, and building for community and collaboration in the departments later on.

### **TOOLS AND PROCESSES**

In responding to the challenges of building community in our decentralized, individualistic setting, we have devised tools and processes to help us in four areas: maintaining focus and communication, collecting and analyzing data, designing the look and feel, and maintaining the site in the future.

#### **Maintaining focus and communication**

Our first concern in thinking about how to manage 25 students on seven teams, most of whom had never gone through an entire systematic design process before, had to do with focus. How could we ensure that the students got a macro view of the overall work effort? How could we help them relate their efforts and the efforts of their team to the overall goals of the project?

To meet this challenge, we prepared a one-page summary, in the form of a table, that breaks the work into weekly goals of three kinds: informational goals, technical goals, and deliverable-building. For instance, the informational goals for Week One were to begin getting information from the people in the unit the team is supporting, define any UW-wide website requirements, collect published (online or paper) information about the units, and begin building the data walls (see below).

Then, we created a progress planner/reporter that students fill out each week. At the top of this form, we reproduce the goals for the week from the summary one-pager described above. The student, in consultation with the rest of the team, comes up with his or her action items to move the team along toward the goals. The next week, the student reports on the status of those tasks and, again in consultation with the team, plans the next week's activities. If the team felt that we needed to adjust the overall goals, they emailed the rest of the group or brought it up in their weekly team meeting.

These two tools, taken together, gave the individual team member a clear overview of the project and the relationship of his or her work to project goals. They also encouraged the individual and team to continuously assess their progress toward the goals.

Our second concern was communication. We wanted the entire project to develop a sense of cohesiveness and community. On this front, we set up several tools and processes.

In our large project room, each team has a cubicle with cloth-covered divider walls. As the teams gather information (unit goals and contingencies, topics, user scenarios, etc.), they post it on the walls of their cubicles in various working displays—"data walls." We have agreed that everybody can look at everybody else's data wall, posting questions or comments on cards or just studying the materials. This process became a kind of start-up ritual for meetings; team members showed up a bit early and take the first part of the meeting to "walk the walls," inspecting everybody's progress, calling the attention of the rest of the team to new or interesting ideas, etc.

We also thought that it would help build community to create a channel for group reports that could have a more personal tone. So we started a weekly email newsletter, the WebFeat Gazette. In the Gazette, we announced items of general interest, offered tips and techniques, and presented a summary report by each team of its activities for the week. Feedback from the students indicates that the Gazette also provided some motivation arising from friendly competition; each team wanted to come up with an idea that would be adopted by the other teams.

On a more formal note, since we are a university and since the students were getting credit for taking part in this project, we also required a one-credit course, conducted by means of an online newsgroup. Here, the students interacted more directly with members of other teams.

Finally, we used email and "working" websites extensively to communicate our progress to the unit representatives on the teams (faculty and staff). These people work in buildings scattered at some distance from each other around the campus. At first they attended the

group meetings regularly, but over time their attendance became less predictable.

### Collecting and analyzing data

We also needed tools and techniques for building a sense of community as we collected and analyzed data. Our first job was to understand the structure and content (and to some extent, the history and politics) of the current pages. We also collected and analyzed the content of all the available printed materials on each unit. This work gave us a view of the current story that the unit was telling about itself.

But we needed to find out more about the story that the unit *wanted* to tell. Given that the units had volunteered to take part in the project, there was presumably some sense that the situation could be improved. Where specifically might the improvements be made? To investigate these issues, we wanted to involve the greatest number of faculty, staff, and students possible.

This effort faced two serious constraints: we could not reasonably interview the hundreds of people involved in person; and, using an electronic approach, we could expect only a brief opportunity to get their attention, interest them, create the sense that it would be quick and easy to give us feedback, and get them to do it.

The unit teams used different approaches, but most relied on email. Ramey had created an analysis heuristic that asked people to think about a number of brief questions about the goals of the site and the constituencies to be served ("Is your site a working space for department business?" "Is your site a recruitment tool for prospective graduate students?"). This heuristic was emailed to all faculty and staff. Our hope was that it would encourage respondents to think about their sites as representations of their departmental community.

We also wanted to build team processes for analyzing the data. To expedite the process, the students on the teams first collected all the feedback and had a working session where they analyzed it and broke it into ideas small enough to fit on a single "topic" card. Their method borrows features from other card-based collaborative design approaches [2].

Then they arranged followup interviews with key people (willing faculty, key representatives of other audiences, etc.). The interviewees commented on the cards and made new ones of their own using blanks. Then they created groups and label them by writing "headings" on colored cards. Finally, they prioritized the groupings. The student interviewers then iteratively created wall displays of the emerging organization.

One wonderful design feature emerged from this phase of the work: the use of gerunds for the top-level links to reflect the "answer-seeking" character of the main users.

For example, the user encounters links like these: Getting Admitted, Pursuing a Course of Study, and Getting Involved in Organizations and Events.

## Designing the look and feel

The core team designed the overall look and feel of all the sites. The primary channel for reaching out to the units, now and later in the maintenance phase, is an online "workroom" where people can borrow design elements (templates, grids, buttons, logos, etc.) for use on their own pages. Faculty will use this resource only if it is easy to find and appears easier to use and more attractive than what they themselves would produce; the core team paid particular attention to these issues in their design. The url of the site is <http://diamond.uwtc.washington.edu/~webcore/>

Here is the current top level of the site:



## Contents

- Introduction...
- What's New...
- Templates and Images...
- Current Projects...
- Contact Us...
- Department Indexes...

This page comes to you from the CoreTeam.

## Maintaining the site in the future

One focus as we thought about the future life of the sites was to build an infrastructure that would create some sense of community in the units based on the web site. We wanted to build sites that were useful or even necessary on a daily basis, as well as being helpful and attractive for other less dynamic purposes. Here we seem to have been overtaken by events; our culture has come to adopt, in just the six months' duration of our project, many "working" uses for websites beyond the main "brochureware" and recruiting purposes. So our challenge now is to provide support for, rather than to lead, this change.

Participatory maintenance by nonexperts in the units is more of an issue. One answer we developed was a "service entrance" to the site, where the person tasked with maintenance (perhaps a secretary, or a student, or even a faculty person) finds tools (CGI scripts, forms, etc.) to update speaker lists, or add class postings, or so on. We also were careful to create an easily understood directory structure, have a readme file in each folder, and comment the code extensively. The html files are basically structured so that a person can follow directions in the comments to fill out a template.

## LESSONS LEARNED

Theorists tell us that a text is never completed, only abandoned. As we approach the time in the next couple of weeks when we must abandon our sites to their real owners, we have turned to analyzing what worked and what did not in this process.

We find ourselves particularly concerned with the entropy that seems to undermine most website designs. We have not been successful in persuading the units to raise the importance they assign to the ongoing work of site maintenance, and unless that attitude changes, and with it the allocation of resources, then our sites will suffer the usual fate. Only one of the participating units has hired a webmaster; the others either have no support planned at all, or expect to attach site maintenance to a secretary's job description. We can only hope that once faced with the fact that we aren't there any more, they will take more serious steps to ensure continuity.

But as we look at the process that we went through to produce the sites, we find that our tools and processes for creating and maintaining a sense of community among the members of the seven teams worked very well. The Gazette's light bantering tone seemed to be important in building *esprit* across the whole team; and the overview of the whole project it provided helped to contextualize the individual efforts. It also proved very effective to use the Project Overview with weekly goals and the planner/reporter that required each person and team to map their efforts to those goals for each week. Finally, based on an examination of the server logs, the online workroom appears to be attracting the users from across the College that we thought and hoped it would.

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