

TRYING TO STAY AHEAD OF THE PACK: DEVELOPING AND SUPPORTING A WWW-BASED CAMPUS-WIDE INFORMATION SYSTEM ON A NETWORKED CAMPUS

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OVERVIEW

In the fall of 1994, the networking of the entire Northwestern University campus (NUNet) was completed. Every office and dorm room gained direct Internet connectivity. The release of NCSA Mosaic coincided with the completion of NUNet. This combination of convenient Internet access and WWW technology has caused an explosion of interest in electronically published information. Academic offices want to publish their information electronically, and students expect to find information electronically.

User Services is responsible for Northwestern's campus-wide information system (CWIS), NUIInfo. We train information providers, provide a central information server, market NUIInfo to information providers and users, develop organization and design, and consult to users of NUIInfo within the Northwestern community. Last summer, we began migrating NUIInfo from a Gopher server to the WWW.

As a result of this migration to the WWW, we have:

- changed the training and support structure for information providers. We have many more information providers, and a more complicated technology; we cannot spend as much time training and supporting each individual department.
- begun collaboration with University Library and University Relations on organization and design. When NUIInfo was only a Gopher, graphic design wasn't an issue.
- encouraged departments to maintain their own WWW servers. We used to encourage departments to publish their information on our NUIInfo server. We also need to support these departments with their new servers.
- encouraged reluctant departments to publish their information. Sometimes administrative offices don't see the benefit to electronically-available information as easily as academic offices do. Yet students clamor to see these services available.
- realized the need to stay current in WWW technology. We

are technology leaders, and need to be aware of new tools as soon as they're available.

These changes are exciting, yet stressful as we try to balance limited resources with a proactive desire to provide more services.

INTRODUCTION

NUIInfo, Northwestern University's campus-wide information system (CWIS), began its life in November 1990 on a VM/CMS system running PNN. Since then, it has moved to a UNIX machine, has gone through its Gopher stage, and is now in its World Wide Web stage.

When NUIInfo was a small CWIS, the human resources devoted to it included one full-time staff member and three part-time students. Together they marketed NUIInfo, answered questions, organized the information, trained providers, and sometimes published information for the providers.

By August, 1994, the entire Northwestern University campus was networked. The NUNet project was complete, and every individual in an office or dorm room was able to obtain Internet access from a port in the wall. This newfound opportunity has enthused students. They want information! It has also excited faculty: they can publish information such as course syllabi and pointers to relevant information at other institutions. Departments are anxious to have their information published on the WWW. Everyone is eager to our services.

We are in the midst of examining issues, re-evaluating services, and reallocating staff so we can provide these services to as much of the Northwestern community as possible in the most efficient and sensible manner, without making ourselves go crazy in the process.

Some of the issues that we have begun to examine include:

- Participation in the CWIS
- Design of the Web pages
- Organization of the information
- Ownership and authority of the information

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Some of the services that have required re-evaluation include:

- Marketing: current services and potential new services
- Taking inquiries about services and information
- Training information providers
- Consulting information providers
- Providing authoring tools, browsers and helper software

ISSUES

Participation in the CWIS

During this past year we have made presentations to Northwestern deans, associate deans and vice presidents to demonstrate a prototype Web presence for the various University schools and departments. We also showed Web pages from other universities to illustrate the potential of the WWW. The enthusiasm generated at these higher levels of administration is trickling down to the departmental levels. We hope these presentations will generate continued interest and support from the Northwestern administration.

Graphic Design

When NUInfo was served through Gopher, graphic design wasn't an issue. A university's presence in Gopherspace was judged on the organization of the Gopher, and by how much information was present.

On the WWW, graphic design is much more important. Since many more casual computer users are "surfing the Internet," the audience reached by a CWIS is much larger than it used to be. A university's external face to the world has become crucial. Prospective students and their parents, faculty, sponsors, etc., will judge the institution by that external face.

We have begun collaboration with University Relations on design issues regarding Northwestern's Web presence. Just as University Relations assists schools and departments in designing their paper publications, they need to assist schools and departments in designing their electronic publications.

We have discussed design issues with the deans and vice presidents of the university, and they seem to agree that all units of Northwestern should subscribe to one similar look in their electronic publications. Electronic visitors to Northwestern should not feel lost as they navigate through our Web pages.

Organization

Providing information serves no purpose if the end-user can't find the information s/he's looking for. Even when NUInfo was a small CWIS served through Gopher, we often received complaints about users not being able to find information. Organization of information has always been our weak suit.

We have begun collaboration with staff from Northwestern University Library to help us organize the ever-expanding information that makes up our CWIS.

Ownership and Authority of Information

When NUInfo was first established, we were anxious to have departments publish their information. At first we accepted hard-copy documents that we scanned or typed in and uploaded for placement in the CWIS. Eventually we encouraged departments to give us diskettes with Word/WordPerfect/PageMaker/Quark files on them; our staff then converted the text, uploaded the ASCII files, and placed the files in the appropriate directories.

When departments published information on NUInfo, they often felt confused as to who was responsible for updating the information. Since the information was on NUInfo's machine, many departments felt the information now belonged to the NUInfo staff, and that it was the NUInfo staff's responsibility to make sure the information was accurate and up-to-date. The NUInfo staff has tried for years to get departments to realize that *they own their* information.

Practically all information that was delivered through NUInfo actually resided on the NUInfo machine. There were occasional pointers to other Gopher servers on campus, but these were generally pointed to under a general area called "Other Gopher Servers on Campus."

Although it was possible for departments to set up and maintain their own Gopher servers, not many departments did. Now that the campus is networked, many departments are willing to set up and maintain an information server; in most cases, the departments are choosing to establish their own Web sites. When a department serves its own information, few people question who owns the information.

Another responsibility information providers must accept is that of ensuring that their information does not misrepresent the university. Through University Relations we are working with the Office of General Counsel to develop policies and disclaimers for the information accessible through NUInfo.

SERVICES

Marketing

Although many departments are anxious to publish their information, some aren't. Academic units generally appreciate the public relations benefit to marketing themselves on the Web. However, administrative offices don't see the benefit to their information being available electronically. Yet students clamor to see these services available. We need to continue encouraging all departments to publish information.

Additionally, because we are technological leaders, we need to be on the constant lookout for how departments might use technology as an alternative to the usual way they've been doing business. For example, services that might be available electronically include:

- applying for admission to the university over the Internet
- ordering transcripts over the Internet
- purchasing athletic or theater tickets over the Internet

Training Information Providers

In the past, the NUInfo staff trained each department personally. Many hours were spent training and re-training individuals how to extract text and save ASCII files, and how to FTP the resulting files to NUInfo. Although performing these tasks is not difficult, some users found them too technical, and needed refresher training each time they needed to update a document (which was sometimes only on an annual or semi-annual basis).

With the increased interest in publishing on the WWW, we have needed to re-evaluate our training strategy. We are developing flexible, streamlined training classes for information publishers. Information publishers learn about the big picture so they can determine where they fit into Northwestern's Web picture. They learn about design, organization and legal issues regarding electronic publishing, and they learn to use publishing tools.

Consulting Information Providers

When there was only a small group of information providers on campus, consulting used to be available directly from the NUInfo staff. Departmental publishers often had their own idiosyncratic methods of preparing their documents for publication. Since the NUInfo staff members had originally trained and guided the information providers, it was fairly easy for them to troubleshoot and solve their clientele's problems, idiosyncrasies and all.

Due to the recent explosion in the number of information providers, it is impossible for the NUInfo staff to devote this same level of energy into the care and feeding of the information providers. Because we are changing the training of the information providers, there should be fewer idiosyncrasies. All consulting problems should be handled through our Information Center.

Consulting on WWW publishing has not been the responsibility of our Information Center staff thus far. It used to be a niche service provided by the NUInfo staff. Only now are we beginning to train the students who work in our Information Center so they can answer many of the elementary questions of our information providers.

Inquiries

The email address nuinfo@nwu.edu receives many mail messages each day. Some of these messages are from present or potential information providers, and some are from general members of the Internet community. The NUInfo staff used to respond personally to each of these messages. Given the increase in inquiries since NUInfo has been available on the WWW, it is not an efficient use of staff resources for the NUInfo staff to continue monitoring this email. We are in the process of transferring this responsibility to a NUInfo student who will refer messages as appropriate, and answer any simple inquiries.

Additionally, there is a voice mailbox for NUInfo. Again, our staff used to respond personally to each of the messages. We are in the process of transferring this responsibility to a NUInfo student.

Providing and Supporting Software Tools

Browsers and Helper Applications

One of the reasons it took us so long to promote use of the WWW on the Northwestern campus was the lack of robust and stable WWW clients for the Macintosh and Windows platforms. Many people had obtained NCSA Mosaic; the popular media had touted Mosaic as the "killer app of the Internet," and everyone just *had* to have it. At that time, we still didn't support and distribute any one WWW client in particular.

Once Netscape released its first non-beta browser software, we decided to support and distribute Netscape. We had found Netscape to be more stable than Mosaic on the Windows platform. We hoped that Netscape wouldn't cause many consulting headaches.

As is a problem with most software applications, different developers tend to leapfrog each other with features available in the software. We still support and distribute Netscape, but the latest beta release of NCSA Mosaic looks like a contender. We will probably be put under some pressure from our user community to consider supporting Mosaic.

We also need to keep an eye out for new software that can be used in conjunction with the browsers. As new and different file formats become commonly used in electronic publishing, we need to re-evaluate whether the software we support at the time can be used to view or play them.

Editors and Other Publishing Tools

We are the trainers of the electronic publishers on campus. As such, we need to keep evaluating the software we teach. The tools currently available for creating electronic documents are in their infancy. Are there alternative tools to the ones we've been using?

Server Technology

Because we are technology leaders, we need to be aware of new developments in WWW server technology as soon as they're available. We need to think about ways of exploiting new technology, develop tools to use the new technology, and implement the new technology where appropriate.

Scripting As departments and individuals learn more about what they can do on the WWW, their needs and desires change. They often realize they want scripts to enhance and give more flexibility to their Web publications. We have realized this need, and are prepared to help people develop their own scripts.

REALLOCATION OF STAFF

Over the past two years, we have made several staffing adjustments toward support of our CWIS. We were granted funding from the administration to create a new training/consulting position. From elsewhere in the organization we reallocated staff so that CWIS staffing at the present time is as follows:

- marketing/policy-making: 1/2 FTE
- training/consulting: two FTEs
- server maintenance: 1/2 FTE

- scripts/software standards: 1 FTE
- students: two FTEs**

**this number does not include the include the students in the Information Center who will be providing basic CWIS consulting

We will continue to modify the staff resources allocated to NUInfo as necessary to keep up with the demand for CWIS publishing.

CONCLUSION

As technology leaders, we need to keep ahead of the hordes of faculty, staff and students who wish to publish information on the WWW. We should be able to anticipate their needs, and be proactive in innovating solutions and finding resources. We need to ponder issues before they mushroom into problems. We need to be willing and able to reallocate staff to meet the burgeoning demand for CWIS-related services.

We need to work with university administration on developing a coordinated, university-approved WWW presence. Sometimes we are perceived as geeks so captivated with technology that we fail to consider the university-wide ramifications of the implementation of the technology.