A Small School Ventures into the World of the CWIS

by Bev Actis

In late 1992, Kenyon College had just completed its campus network infrastructure. This new environment provided an institutional “integration” that enabled Kenyon to consider the possibility of a campuswide information system. Kenyon began its planning by investigating many other CWISes on the Internet. In the process, the most important issues to be addressed in launching a successful CWIS were identified. This article discusses those issues and provides a guide to other small schools in getting started.

By the fall of 1992, Kenyon College, a liberal arts school of 1,500 students in Gambier, Ohio, had just completed its campus network infrastructure, which provided network access to virtually all campus buildings. The campus community was communicating via e-mail and beginning to share much information electronically. The time was ripe for Kenyon to consider how to utilize this new environment to more fully integrate its wide variety of information resources into a campuswide information system (CWIS).

At that time, a task force of interested staff members from Information & Computing Services (ICS) began looking, via the Internet, at other campuses with CWISes. Since Kenyon’s financial situation allowed very limited personnel and financial resources for such a project, ICS had to find a way to build a CWIS at the right price. At the same time, Gopher was beginning to become a hot topic on the Internet. It was the Gopher software developed by the University of Minnesota that gave us the breakthrough we needed to proceed with our CWIS, since Gopher was not only free, but also enabled us to provide both local and Internet resources to the campus.

ICS began planning for KCInfo (as we called our CWIS) by collecting from the Internet all the information we could find about other CWISes, so that we could learn from their strengths as well as their weaknesses. We contacted many CWIS managers for ideas on how to go about getting started. By sifting through all this information, we were able to identify a dozen issues in launching a CWIS that ICS needed to address. These issues included:

- needs and resource assessment
- ownership issues
- access and privacy
- personnel needs
- content standards
- policies and policy boards
- main menu design
- the coordinator’s role
- sponsors and information providers
- marketing strategies
- ongoing development
- evaluation

The following discussion of these issues is meant to provide a general strategy to help other small schools considering a CWIS to take those first steps in getting started.

Do we really need a CWIS?

The first question we asked ourselves was, “Do we really need a CWIS?” With the budget

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restrictions we were facing, would the service a CWIS provided to the campus really be worth the time and work required to develop it? What compensating benefits could it offer?

Since most members of the Kenyon campus were not yet familiar with the concept of a CWIS at that time, we in ICS were almost alone in our enthusiasm for one. We believed that it would fundamentally change the way we shared information with each other and the outside world, and we truly felt that developing a CWIS was an opportunity we could not afford to pass up. The number of CWISes being implemented in institutions across the country was increasing rapidly, confirming that this concept was an idea whose time had come.

Other benefits of a CWIS were that it could provide easy access to a broad range of college information as well as Internet resources. It offered a central location for that information, as a kind of “one-stop shopping” resource and it would be available around the clock from any workstation on campus. A CWIS could save users much time in finding college-related information because of its twenty-four-hour availability and the ease with which it could be browsed. It could also help increase the productivity of anyone providing information to it, since electronic updating and distribution could be accomplished more efficiently.

KCInfo could also significantly reduce the use of paper on campus. Although it might not completely replace paper-based documents, they would be printed only at the user’s discretion; thus they would not be wasted on users who had no real need or desire for them. All of these reasons have been proved valid in the ensuing three years, as more and more college information resources have been made accessible electronically through KCInfo.

Needs and resources: what we want vs. what we have

Our first task was to determine what resources we had. Kenyon’s all-campus network was our biggest asset, since it provided universal access to computing resources. The network was connected to a cluster of DEC VAXes connected to workstations, half of which were terminals and half microcomputers. With half the campus still using terminals, we realized that the software to run the CWIS would initially have to be software that could run on the VAX mainframe to be accessible to all users.

Using a timeshare environment for our Gopher server was not ideal, since it might put a strain on the VAX cluster when usage became heavy. A separate, dedicated machine would have been preferable but was not possible at the time, so we plunged forward on the VAX to get started. Should system overhead present a problem due to the growth of the CWIS, relatively cheap add-on memory and disk storage could be purchased as needed.

In the future, as we evolved into a system of networked microcomputers, we could migrate our CWIS to a dedicated microcomputer set up as a server.

Why did we first choose Gopher software?

In regard to the software required to run a CWIS, we couldn’t afford to allocate staff time for developing our own software because of budget and personnel limitations. Given these limitations, the increasingly popular Gopher software seemed to be the perfect solution for Kenyon at the time, since the software itself was free, and it was easy to maintain. It had become so popular that the University of Minnesota (its creator) and other third parties were continuing to make ongoing improvements to it at a rapid rate.

Gopher had already become a standard on the Internet. Its modular design made it easily expandable, simply by linking up to another module or server, either locally or remotely. It offered a logical, hierarchical menu structure and a minimum of keystrokes for the user to learn. Information retrieval was easy because the location of information was transparent to the user.

Gopher had other important features that made it seem the right choice for Kenyon at the time. It was originally meant to be an Internet “gofer” or navigator, and during its few years of existence, it had acquired the ability to access all kinds of Internet resources, regardless of type or location. These resources included anonymous ftp archives, Telnet sessions, searches through Veronica and WAIS, gateways to online library catalogs, and links to several thousand other Gopher servers around the world.

At the present time, as Kenyon is beginning to develop its World Wide Web server, we will be able to make a smooth transition from our present Gopher environment to the new Web environment. During this transition time, Web browsers will be able to access and display information in KCInfo on our Gopher server until the transfer of that information to the Web server is completed. KCInfo also will remain accessible from the VAX as well as from Kenyon’s Web home page for this period of time. When information providers can be trained to convert their KCInfo documents into HTML format for direct placement onto the Web server, the Gopher version of KCInfo will be discontinued.
Ownership issues: whose CWIS is this, anyway?

In talking to individuals who had implemented CWISes at other campuses, we learned that issues regarding responsibility for information content had posed big problems. It was important to define at the outset who “owns” the information. Because of possible legal implications for Kenyon, it was important to make a clear distinction in roles between the institution and those groups who wanted to sponsor the information in the CWIS.

We viewed KCInfo simply as a vehicle that acted as a “collector and storer” of the information, similar to a library. The role of the sponsor of the information was that of author/editor/publisher. By not editing beforehand the information that was placed in KCInfo, Kenyon would not be responsible for any material that might later be found to be illegal, such as copyright and privacy infringements, libelous or derogatory information, etc.

ICS does, however, regularly spot-check KCInfo documents to ensure that they adhere to certain content standards set up in our KCInfo policy document. Even though we do not edit material before posting, we reserve the right to delete information that is contrary to those standards, if notification to a sponsor about the need for corrections or updating goes unheeded.

As owners of their information, sponsors had full responsibility for its quality and legality. We directed that each sponsoring group (a college department, program, or organization) create its own internal process of review and approval of any documents provided to KCInfo. Sponsors were also charged with selecting a representative to become their information provider, who would be responsible for the editorial management of the sponsor’s documents: formatting, proofreading for grammatical accuracy, posting, updating, and deleting documents.

To identify ownership, every document in KCInfo was required to have a header at its beginning, containing the name of a contact person from the sponsoring group, so that questions and problems could be directed to the proper source. This header also contained the last edit date of the document so that readers could tell how current the information was.

In our current development of Kenyon’s Web server, the question of ownership and responsibility has become even more important, since we have decided to allow not only college groups, but also individuals who are Kenyon affiliates, to become sponsors of a Web page. This includes students, faculty, administrators, alumni, and community members. Individual sponsors will be able to design and maintain their own home page on the Web, once an initial training workshop is completed. Our Web server, however, will contain a specific disclaimer of responsibility at the point of access to personal home pages, so that Kenyon’s role as “collector and storer of information” remains clear to the outside world.

Access and privacy

It is important that sponsors understand the concept of open access before they begin to plan their information. A Gopher-based (and now Web-based) CWIS is available not only to campus users, but to anyone with Internet access. Although it is technically possible to restrict access to certain documents, Kenyon decided that KCInfo was not to be used for restricted information.

In the future, if Kenyon integrates administrative functions within the Web server, there may be good reason for restricting particular information to certain users. For the present, however, information posted in KCInfo is accessible to all browsers on campus or from the Internet.

Regarding the issue of privacy, ICS had to address two concerns: user privacy and data privacy. We had to be careful, in any analysis of usage statistics, that the data would not be used to identify what documents individuals accessed in KCInfo. Libraries have long been aware of the need for user privacy in book checkouts by individuals, and Kenyon had to be sensitive to this in regard to electronic documents.

Data privacy considerations in light of the Family Educational Rights to Privacy Act (FERPA) require that personal information, such as an individual’s home address and phone number, not be made available for public access without allowing that individual the choice of withholding it. This had to be clearly conveyed to sponsors who might inadvertently include inappropriate personal information in their KCInfo documents. Although these privacy issues were not specifically mentioned in our original policy document, they will be in the revision it is currently undergoing.

The preparation of the electronic campus phone directory for KCInfo is a good example of the need to be aware of privacy issues. We had lively discussions about the information that should be made available, since it would be accessible to anyone on the Internet. Our paper-based phone directory contained home addresses of all students and employees (although an individual could elect to withhold that information from the directory).

However, with the electronic version that
would be accessible to the Internet, we decided to limit individual information to the following items: Student listings included only name, year of graduation, Internet address, and dorm phone; faculty or staff listings included the name, position title, department, Internet address, and office phone. Home addresses and phone numbers, as well as campus addresses, were left out. This limited directory has worked satisfactorily thus far. Any individual may also elect to withhold personal information from the KCInfo directory.

**Personnel needs: who's going to do the work?**

The financial climate at Kenyon was such that there was no chance of hiring additional personnel to develop KCInfo, so the time involved in implementing and maintaining it had to be carved out of existing ICS staff time. Therefore, it was imperative that ICS train KCInfo's information providers to be as self-sufficient as possible. After contacting several other schools about their CWIS personnel needs, we mapped out a tentative personnel "duties" list. (The time actually spent on KCInfo development and maintenance is also included here as well.)

- **System administrator** is responsible for managing the CWIS software and hardware, performing upgrades and migrations and customizing as necessary. Estimated time per week, after the initial installation/test period, is one to two hours; upgrades and any special streamlining "tools" take additional time.
- **Coordinator** is responsible for marketing and public relations work, management of the CWIS menu structure and development, training and support for information providers, and recordkeeping. For the first six months, the coordinator's duties were off-loaded so that half of her work time could be spent on CWIS development; thereafter, estimated time per week was five to seven hours.
- **Sponsors** (college departments, programs, or organizations) are responsible for information content, i.e., they define and organize information, develop internal review and approval processes, and select information provider(s) to post and maintain their information. After an initial planning process, additional time would be required only as new menus and documents were planned. Individuals, as well as groups, will be able to become sponsors on the new WWW server.
- **Information providers** are responsible for editorial management of documents; they are required to take a training workshop. After an initial learning period, the time needed for preparing documents for KCInfo was not more than required for most paper-based documents. In Kenyon's WWW environment, individual sponsors will be the information providers as well. [Note: as with any new resource, ways to utilize it keep expanding, so that in the long run, information providers will spend more time preparing many more kinds of documents for electronic publication than they would have attempted on paper.]

**Content: meat and potatoes of the CWIS**

Although it may seem obvious, the selection and organization of the information (content) is the most important consideration if the CWIS is to be well used. It should contain information that is informative and interesting because it has to motivate the user to want to explore it further. The menu structure must be organized intuitively so that the novice user can find the needed information easily.

One of Gopher's nice features is that the same information can be accessed from multiple locations in the menu structure, thus providing users with more than one logical menu path to follow. In Kenyon's planned Web environment, the use of links will offer an even greater flexibility in information display.

Defining and organizing information requires time, and it cannot be rushed. Getting sponsors to understand the importance of this planning phase is the key to the success of the CWIS. Information that is unclear or poorly organized will simply not be read, and the CWIS will be bypassed.

By making the sponsors and information providers responsible for all aspects of the content, ICS did not have to spend staff time on proofreading, formatting, or posting the information to KCInfo. As mentioned earlier, each sponsoring department or organization determined its own internal review and approval process for information targeted for KCInfo. Questions about the information were directed to a contact person from the sponsoring department, whose name was identified in the document header. This helped direct questions from readers to the appropriate source, so that they would not take up ICS staff time.

If we had not distributed responsibility for content, ICS would never have had the staff resources to handle the CWIS implementation or its ongoing management. We trained the sponsors and information providers to be as self-sufficient as possible so that we could then concentrate on the system management responsibilities that only ICS could perform.

Early in the project certain content and formatting standards were established before any information was posted to KCInfo. Although ICS
ICS decided that it would be good preventive medicine to set up a policy document and a policy board (drawn from all college divisions) to oversee KCInfo.

Policies and policy board: guide, watchdog, and referee

Other campuses had experienced many problems in setting up their CWISes because they had no clear guidelines to follow and no means of settling the inevitable conflicts that arose because of differing opinions. Examples of these issues were disagreements on the design of the main menu; personnel responsibilities; copyright, privacy, and other legal issues; ownership issues; lack of content standards; access issues; and so forth.

ICS decided that it would be good preventive medicine to set up a policy document and a policy board (drawn from all college divisions) to oversee KCInfo. We set up a committee, with broadly based representation, to write a policy document that would be in place before KCInfo was made available to receive information.

The KCInfo Policy Document defined the membership of the policy board, which represented the various college constituencies. This board would oversee the management of KCInfo, define and enforce the policies governing its operation, and settle any conflicts that might arise. The policy document defined the responsibilities of the sponsors, the information providers, and the management of KCInfo. It also established content standards for any information being posted.

At the present time we are in the process of broadening the policy board’s scope of responsibility, which now includes Kenyon’s WWW server, ftp site, and other networked services. The policy board membership has also been expanded to include a special representative from the library as well as the department of public affairs. The library has already played a significant role in KCInfo’s development, and public affairs staff have been invited to participate in the design of our new Web server’s home page. It is anticipated that both of these departments will take an increasingly visible role in its development.

Designing the main menu

Before any information could be posted to KCInfo, the ICS task force was faced with the decision of how to design the main menu. The menu topics were critical, because they had to be broad enough in scope to include the wide range of information to be made available to the campus and intuitive enough to allow the reader to find information easily. We investigated many other CWISes to determine which topics were most appropriate for ours. Then we listed all of Kenyon’s departments, programs, and services to see what kinds of information we had to work with and how we might best categorize them.

After we tentatively decided upon a dozen broad topics for our main menu, we set up a prototype menu and made it accessible to campus users to get feedback about the appropriateness of the topics. Were they broad enough, inclusive enough to cover the information to be posted by the many and varied campus groups? The main menu remained flexible during this test phase, but after a limited time, the main menu was “frozen” so that we could get on with the work of developing the menus.
This prototype menu was skeletal, with a limited amount of information in it, but what it had was useful or entertaining enough to draw the reader into browsing through it. The local information that was entered already existed, either on paper or online somewhere else: campus directories, newsletters, calendars of events, computing and library information, announcements, course listings, and so forth. Putting this information into KCInfo made it much easier to find, which served to illustrate its potential as a one-stop information resource.

Since Gopher enables one to browse the Internet, we included several Internet resources as enticements, such as the U.S. Weather Service, White House press releases, the Internet Hunt, and other interesting Gopher sites.

Soon after, the library staff joined forces with ICS by developing an extensive set of menus containing library information. They were instrumental in creating a “Special Electronic Information Resources” menu, which links our Gopher to a wide range of Internet resources, grouped by academic interest. This was instrumental in getting students to use KCInfo, because so many resources used in class work were so easy to access.

KCInfo’s main menu has remained unchanged since it was frozen, with one exception—the addition of a “Comments” topic to encourage reader feedback. With Kenyon’s transition to WWW, we will have the opportunity to rearrange topics, combining some into even broader categories. With the aid of the admissions and public affairs departments, we will be able to put more emphasis on the information needs of the prospective student. Kenyon’s home page will also provide a link to all personal home pages of all Kenyon-affiliated individuals wishing to post information.3

The coordinator: cheerleader and trainer

Once the groundwork was laid, we selected a coordinator to manage the day-to-day development of the CWIS. This person had to have excellent organizational skills, since part of the job would be to assist sponsors in organizing their information and selecting an appropriate location for it in KCInfo. One of the ICS staff, a user services specialist, was chosen for the job. Some of her regular work duties were offloaded so that she could devote half of her work day during the first six months to CWIS development, since it would initially require an intense effort on her part.

Another important quality in the coordinator was the ability to envision a fully integrated and operational CWIS and communicate this vision to the campus. The preliminary work involved much marketing and cheerleading, but they were necessary in getting the campus hooked. In the beginning, she spent much time contacting heads of key departments on campus, discussing with them the opportunities that KCInfo offered them in more efficient and cost-saving information distribution.

The coordinator had to develop good record-keeping tools to keep track of the growth of the menu structure and the information providers. Good records were essential in troubleshooting problems effectively, so the coordinator could find the problem areas and correct them. Knowing where menus and files are located was also important in developing tools to streamline the copying and maintenance of files in KCInfo.

The coordinator was also responsible for the training and support of the information providers. This included developing a training workshop, writing a handbook of guidelines, developing ways of streamlining the preparation and maintenance of documents, and phone consulting. Each of these areas required much time for development during the first six months.

Another of the coordinator’s duties was to regularly spot-check the documents that were already posted in KCInfo for adherence to the established content standards. She did not edit the documents, but instead notified information providers about any information that was out of date or wildly inaccurate. It was up to the information provider to make corrections in a timely manner. When information providers first began to post information, they needed reminders to review their documents. The coordinator sent them periodic e-mail reminders, which were also used to request feedback from them about any difficulties they might have encountered in maintaining their documents.

Information providers: the worker bees

As mentioned earlier, information providers were given responsibility for the editorial management of the sponsor’s documents. This included making sure the posted documents were up to date, grammatically accurate, and in proper format for KCInfo display.

All information providers were required to take an initial training workshop to learn how to prepare, post, and maintain their information. There were no exceptions to this rule."

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3 Kenyon’s home page can be browsed at http://www.kenyon.edu/
written for this workshop and covered all the above information, serving also as a reference manual after the training. The coordinator also developed simple ways for formatting, copying, and deleting KCInfo documents so that the information provider’s work with KCInfo would be made easier.

**Marketing strategies**

For a project of this kind to be successful, the coordinator had to market the idea to several audiences: first, to the ICS staff itself, since they would be responsible for a new resource that required much cooperation and support to get started; second, to the upper management of the college, since their support was necessary to motivate the sponsors to get involved; and third, to the campus in general, so that they could see the value of KCInfo in providing them with readily available, easy-to-find information.

We used the KCInfo Policy Document itself as an important marketing tool. To obtain approval for the document and the proposed KCInfo Policy Board, we had to go before the senior governing board of the college to present our vision of KCInfo, answer their concerns, and ultimately gain their support. The policy document was a symbolic statement that we saw this resource as an invaluable tool for all constituencies of the college and intended it to be developed in a purposeful, responsible manner.

In the beginning it was important to create publicity and interest in whatever ways possible—an initial college-wide e-mail release with an invitation to attend a KCInfo demonstration, introductory workshops and meetings for potential sponsors and information providers, articles in college newsletters describing KCInfo’s features, monthly e-mail messages about information topics recently added, and personal contacts with key department heads to persuade them to participate, hoping that by doing so they would encourage other departments to do likewise.

In the current development of Kenyon’s WWW server, the marketing effort will not be as pronounced as it was with KCInfo. We are now being prodded by faculty and students to get the Web server up and running because they understand the potential offered by the multimedia Web environment and are eager to share their material with each other and with the world beyond.

**Ongoing development: keeping the wagons rolling**

KCInfo passed through some distinct phases in its development. In the preliminary or “evangelistic” phase, the coordinator had to work hard to motivate potential sponsors and to interest the campus in seeing the value in KCInfo.

After some initial training workshops were held, there was a very gradual growth during the next six months, as a few of the key departments came on board. But by the end of its first year, the number of documents in KCInfo had grown to nearly 1,000 and the number of connections to it per week increased to nearly 10,000. As more information was added, the usage increased, and as usage increased, more potential sponsors came on board as they began to realize its potential. It became difficult to keep up with the demand for workshops and menus.

It is important to keep in mind that it took about a year for KCInfo to become truly useful, when the point of critical mass was reached. This was the point where people began to consider KCInfo as an integral part of campus life. The pendulum had swung, so to speak. During this phase, good record-keeping became especially critical in order to keep track of the menu growth.

The coordinator has continued to remain tuned in to new developments on the Internet affecting Gopher and WWW. By regularly collecting and organizing information from the University of Minnesota Gopher, the CWIS-L listserv, and other Internet resources, she has been able to incorporate important new features into KCInfo. Some new tools will streamline and automate posting and file maintenance. Some Gopher tools that have been developed at other Gopher sites include automatic expiration of documents, document conversion into ascii format, automated transfer of information into the CWIS, reports on “what’s new” in the CWIS, document access statistics for information providers, programs that identify “dead” links to other servers, and full text and keyword search tools.

In our current phase of integrating KCInfo into Kenyon’s WWW server, we continue to seek tools that will help information providers translate their word-processed documents into HTML format for Web viewing. We must also develop simplified ways of copying, updating, and deleting documents on the Web server so that information providers can continue to function as independently as they have with KCInfo.

**Evaluation: looking for feedback in all the right places**

As with any new project, it is important to get regular feedback in as many ways as possible. This can be done, of course, with periodic surveys and questionnaires. Patterns of growth can be plotted from Gopher usage logs, which also can provide document access statistics to information providers.
Some of the most valuable feedback is less formal—getting suggestions from users via a “Comments” topic on the main menu, regular follow-up with information providers, and monitoring the CWIS “image” (revealed subtly in references to it in conversation and campus publications). Even complaints are a most valuable form of feedback in providing ideas and impetus for improvement.

**Conclusion**

The explosion of information in our society today requires that we, as information technology experts, find the most efficient tools for accessing that information and presenting it in a meaningful way. KCInfo has become that kind of tool, providing access to a broad range of information at a relatively inexpensive cost to users wherever they are and whenever they may need it.

Although KCInfo was intended as a supplement to other forms of information distribution, it has already replaced some kinds of paper-based communication and has significantly reduced the use of paper over time. Currently many of the college handbooks are in electronic form in KCInfo, thus greatly reducing the need for paper copies, and enabling them to be kept up to date more quickly and easily.

Some faculty have used KCInfo to provide course work resources to their students, although they are still in the minority. However, Kenyon’s Web server, which offers multimedia presentation, has excited many more faculty with the prospects it offers for sharing course work materials and individual research.

One of the biggest benefits of Kenyon’s CWIS is that it has greatly improved access to information for the campus and has increased communication among all groups: students, faculty, staff, alumni, parents, and friends of the college. As it has grown, KCInfo has been instrumental in promoting a greater sense of collegiality on the Kenyon campus …

**Two Sites …**

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Many of these are the topics of ongoing discussion, on campuses and on listservs. The Web4Lib and PACS-L listservs are particularly good resources for practical library experience.5

**Conclusions**

At the heart of this comparison of two experiences is the operating model. Interdepartmental teamwork, fueled by mutual interests and guided by an intimate knowledge of user needs, proved the effective organizing principle for both sites. A year apart in time and contrasted in so many ways, both IUPUI and Jefferson came to the same conclusions about what was needed both to create the initial product and to maintain it afterwards. This has profound implications for the traditional hierarchies of academic life.

Much has been written in the business and management literature about team building, team processes, and their effects on organizations. Successful implementation is a long-term commitment to the breakdown of organizational barriers, empowerment of individuals, and focus on shared vision rather than protection of turf. Libraries are expanding their scope, becoming publishing houses, entering the education arena in partnership with teaching faculty, and serving as research agents. By stressing teamwork, interdependence, mutual interest, and problem solving on behalf of information consumers, librarians and technologists will come together both personally and organizationally.

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5 Subscribe to the Web4Lib listserv by sending e-mail to listserv@library.berkeley.edu, containing the message: subscribe web4lib <firstname> <lastname>. Subscription information and basic description for PACS-L are available at URL http://info.lib.uh.edu/pacsl.html