The CWIS is Dead! Long Live the CWIN!

Cedric Bennett,
Director, Applications Support
Stanford University

Abstract

This paper compares two models for delivering wide, easy information-access for members of our institutional communities and beyond. It contrasts between centrally managed and supported systems and distributed networks and services. It uses this comparison as a means to explore several interesting management challenges which the deployment of these technologies have created, many of which are still to be addressed.

Newer information technologies support, and even encourage, widespread information sharing. Relatively easy-to-use protocols plus easy-to-obtain client and server code ported to a wide variety of platforms has made publishing information campus-wide, and even world-wide, a simple matter for anyone with a network connection and the will. These new technologies are replacing the notion of the Campus Wide Information System (with its implied central control) with the much more managerially complex concept of a Campus Wide Information Network (CWIN).
Where did the CWIS come from?

*Providing Information*

During the 1980's, many institutions sought ways to use information technologies to electronically share information widely across their campuses. For the most part, these technologies involved maintaining central information stores on large centrally managed processors, creating a mechanism for navigating to and through the information, and making it available to students, faculty and staff via terminal access. Management and process infrastructures were created (often using existing structures) to support the growth and maintenance of these information stores.

The types of information provided via these means were of various types – central policies and procedures, library catalog and other bibliographic data, instruction and documentation regarding electronic services themselves. In addition, they often had one major characteristic in common; the information providers were most often central organizations supplying information to other central and de-central organizations as well as to individuals.

These systems met the goals initially set for them of providing information from central information providers to central and de-central information consumers. However, for the most part they were expensive to establish and to maintain. Only a relatively few institutions actually provided such services. These systems eventually became known as Campus Wide Information Systems (CWIS).

*Exchanging Information*

During the same time period, other information exchange technologies were also becoming more and more available. NetNews, Bulletin Boards, and List Serves were gaining in popularity, at least among the technical community. These mechanisms were designed more for the exchange of information across the network and between colleagues than just information providers supplying information to information consumers – they provided a means for dialog not usually present in the other model. These technologies remained relatively difficult to use and did not spread dramatically beyond the technology community.
What’s a CWIN?

Newer CWIS Technologies

At the close of the 1980’s, newer, network-based, desktop-centric, ‘point-and-click’ technologies began to appear. These newer technologies supported and encouraged widespread information sharing. Gopher\(^1\) and World Wide Web (WWW)\(^2\) protocols plus easy-to-obtain client and server code ported to a wide variety of platforms have made publishing information campus-wide, and even world-wide, a simple matter for anyone with a network connection and the will. In fact, it has been the acceptance and deployment of these technologies which has lead to the term “Campus Wide Information System” (CWIS).

All of a sudden, the means to provide information widely was within the grasp of any institution. Although Gopher began as the preferred approach, it was overtaken within a very few years by the WWW protocol — primarily because it is a faster growing, ‘richer’ protocol and because clients were created early that supported all popular systems.\(^3\) The rapid acceptance of the “Web” both in academia and in the commercial world has created opportunities and it has exposed (or exacerbated) problems.

Campus Wide Information Network (CWIN)

Since it is true that anyone with the will to do so, can create a presence on the Web and can link that presence to any other presence on the Web, it is no longer appropriate to think in terms of just a “system” (which includes an implied concept of control). The Web is not as controllable an environment as the initial concepts and implementations of the CWIS. It requires a shift in thinking to understand that older system-oriented management principles will not work in such a widely distributed and networked information environment. For many providers, especially those already used to the CWIS idea, there is discomfort in the notion that information can be made so readily available.

Management Issues

Seekers, Providers, and Managers

The information environment has three principle players;

- those who are seeking information
- those who are providing information
- those who manage the information technology infrastructure

These roles have always existed, but have not always been clearly delineated (because providers and managers were often the same people or organization). Of course, it is possible that any single person or organization can play any or all of these roles. It is important to understand the similarities and differences of each.

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\(^1\) Originally developed at the University of Minnesota.
\(^2\) Originally developed a CERN (The European Laboratory for Particle Physics in Switzerland).
\(^3\) GUI clients, notably Mosaic from NCSA, were developed early for Unix, Windows, and Macintosh.
For seekers of information, it is important that the mechanisms for seeking be easy to use (especially for inexperienced seekers). It is also important that the mechanisms be fast and allow experienced seekers to get to the sought after information in very direct ways. It is very important to all seekers that the information, once found, be known to be authoritative.\textsuperscript{4}

For providers of information, it is important that the information being shared is easy to find. It is also important that the information be easy to maintain directly by the provider and not through some intermediary (i.e., to change, to withdraw, to create). And it is important to most providers that the authority level of the information be clear and believable.

For managers, there are many concerns; here are a few:

\textbf{Usage}  
Includes issues of living with the ‘ad hoc’ nature of the CWIN and satisfying the needs for authenticating the authority level of the information. It also includes server, network, and client performance issues.

\textbf{Cost}  
The tradeoffs of using open, public protocols vs. proprietary approaches and the ability to fully utilize work already done by others (make vs. buy vs. share vs. assemble).

\textbf{Stewardship}  
Who, at the institution, is responsible for “Home Page,” the ‘look and feel’ of the institutional pages, and the “protection” of the institution from inappropriate use (e.g., copyright compliance, what’s official university information, unacceptable publication).

\textbf{Support}  
Who provides Web services to others? How are users (both seekers and providers) supported?

\textbf{Information Policies}  
What is the institution’s electronic information policy? Who polices that policy?

\textbf{Wrap up}  
The point of this article is simply to raise the idea that working with newer, network-based, information exchange technologies is going to require a new way of thinking and a new way of managing – perhaps best summed up in the phrase “managed anarchy.” The notions and management principles that derive from a fully centralized systems point-of-view will not serve us well in this newer, distributed environment. That does not mean that we must give up all hope of management and even control of some aspects of the environment but only that it will require some additional thinking.

\textsuperscript{4} More accurately, it is important that the authority level of the found information be clear (even information with little authority can be valuable – but its authority must be known.).
It is also useful to keep in mind that it is difficult to tell where this technology will eventually take us and what its impacts will be. We can be very sure that it will have an impact and that it will eventually be profound. It is much less certain just what those impacts will be.\footnote{The National Highway System got its start when Congress asked General Pershing to organize a system of National Defense Highways (which led to the publication of the so-called “Pershing Map” in 1922). No one at the time was able to predict the eventual impact on our society of a National Highway System. It is just as unlikely that we, at this time, can predict the eventual impact on our society of a National Information Infrastructure (“Information Highway”).}