In his novel *Galatea 2.2*, Richard Powers wrote, “After a while the calendar becomes a minefield.” Many higher education institutions that are currently trying to deploy calendaring and scheduling (C&S) services may feel that this sentiment is uncomfortably close to the truth.

What Is Calendaring and Scheduling?

In very broad terms, C&S may include personal calendars, group calendars, event publishing, resource management, facilities management, and reservation systems. It is very unlikely that a single tool will meet an institution’s needs in all of these domains. A critical step is to choose a subset of services to be provided.

The three most frequently demanded services from users today are personal scheduling, group scheduling, and event publishing (and browsing). Many Internet service providers and commercial Web portals offer personal scheduling services to their users. These services are similar in functionality to the Personal Information Managers (PIMs) that were popular as standalone desktop applications in the 1980s and 1990s. The advantage of the new services is that users can access the information through a Web browser. However, these services do not offer true groupware functionality. Other users of such systems are generally not able to search for free/busy times, invite a group of people to a meeting, or reserve a meeting room. These services are also unable to alert users who are away from the computer.

True group scheduling systems have offered most of these features for many years. However, the majority of the products in the marketplace during the mid-to-late 1990s did not scale well for organizations with more than five hundred users. In many cases, these products were layered on top of proprietary e-mail systems, and the calendaring information could not traverse the Internet. Since 1996, a number of vendors in the C&S market niche have been participating in the Internet Engineering Task Force (IETF) to create a set of interoperable protocols. The Calendaring and Scheduling (“calsch”) Working Group has standardized the data formats for events, to-do lists, and alarms in the iCalendar specification (RFC 2445).

Today many vendors—including Steltor, Microsoft, IBM/Lotus, Netscape/iPlanet, Critical Path, and eCal—have at least partially implemented support for iCalendar. This does not necessarily make these products interoperable, but it is one of the steps required to achieve interoperability. In addition, the working group is developing protocols to carry iCalendar over e-mail (iMIP) and also a client-server protocol, Calendar Access Protocol (CAP). These protocols are not yet finished products, however, and are only beginning to be implemented by interested vendors.

The IETF calsch group is not working on protocols for reservation systems, which are similar to C&S systems but also support business rules. For example, rules to reserve classrooms might say that faculty members can reserve a room as far in advance as eight months but that student groups can reserve a classroom only three weeks in advance. Because of the potential complexity of these rules and the amount of custom configuration required, reservation systems are a small vertical market, and the systems tend to have a high price tag.

The third type of C&S service popular today is event publishing, which advertises “public” events to a wider community. These systems are the Web equivalent of the weekly event listings published in traditional newspapers. They have evolved from a simple plaintext page of listings to fully hyperlinked systems searchable by a variety of criteria, with some even supporting customizable views for individual viewers. One of the distinguishing features of an event publishing system is that it is not used to make mass invitations to all users. Instead, users have to take an explicit action to view the event listings.

Some of the groupware C&S systems provide tools to create an event publishing system layered on top of the base C&S system. Many colleges and universities have developed their own solutions as well. The University of Virginia’s event calendar (<http://codd.itc.virginia.edu/eventcal/>) and MIT’s event calendar (<http://events.mit.edu/>) are two examples. At some campuses, the event publishing service is part of a larger campus Web portal system.

One of the problems with most of the currently deployed event publishing systems is that they are not well integrated into the users’ personal calendars. Most of the systems do not allow users to add a public event to their personal schedule.
Of those that do, many often do not properly track the event. If there is a postponement or cancellation, for example, the user may not be notified.

Finally, simply providing users with a basic C&S system will not guarantee a success. In a 1957 article in Look magazine, Marilyn Monroe was quoted as saying, “I've been on a calendar, but never on time.” The context may have been different, but the message applies: many institutions have found that although they provide a C&S system that supports group scheduling, users continue to deploy the system as merely a PIM.

Issues Unique to Higher Education

Many colleges and universities are interested in linking a C&S service to a backend system. For example, once a student is registered for a course, the class schedule and syllabus should appear in the student’s calendar. How this information can be viewed is important. The time on the schedule should appear as busy, but others should not be able to read the course-specific information. Making such information visible to others would conflict with the Family Educational Rights and Privacy Act of 1974 (FERPA). Even the management of this information may cause problems: defining a calendar group for each class and allowing all users of the system to view the group definitions could violate FERPA compliance.

Another issue is “schedule spam.” If an institution can place meetings into a large number of users’ schedules, what policies should be in place? Should a department head be able to put an event into each department member’s schedule? “Schedule spam” will affect more than just the load on a system and annoyance to recipients. It will also affect users who make free/busy queries when trying to invite another user to a meeting, or as Henry Kissinger said: “Next week there can’t be any crisis. My schedule is already full.”

Before embarking on a project to implement C&S services, higher education institutions should consider the following questions and topics:

- What is the size of the initial user population? What is the estimated size of the user population at full utilization? How much time will there be between initial rollout and full coverage?
- Include the operations staff from the beginning. Issues such as available server platforms are sometimes showstoppers for the groups destined to operate and maintain calendaring infrastructure. Decisions about system availability and support will affect existing operations staff.
- Account creation and maintenance is important: colleges and universities are accustomed to adding large numbers of freshmen students and deleting large numbers of graduating students from campus systems. Investigate the ability of a C&S system to accommodate the fall and spring changes and to extend existing mechanisms to the new service.
- Will the service be free to campus users? If not, who will handle the financial work? Will the service be subsidized?

What is the security model of the system being considered? The sensitivity of users’ calendar data may be deceptively high. Do passwords traverse the Internet in the clear? What about calendar data? Does the C&S system fit into any existing security infrastructure?

Perhaps most important, higher education institutions must tackle the issues surrounding user acceptance. Many users and departments will already be using personal or group products. Although these systems may be inappropriate for campus-wide use, they are probably well understood and much loved by the current users. These groups must be identified and included in testing. They will be the hardest users to satisfy, but their input can help provide an understanding of how such systems are really being used, and these more experienced users will offer very frank and insightful feedback on any proposed campus-wide service. To a large extent, these are the people who can help keep the C&S system from becoming a “minefield.”

Notes

1. See the IETF Calendaring and Scheduling Working Group Web site: http://www.calsch.org/-. This site will try to provide up-to-date information on commercial andshareware products,open-source efforts, studies and articles, tools and utilities, and pointers to standards. For additional information, please also see http://www.cren.net/known/techtalk/events/calendaring.html/, which contains an archive of the CREN (Corporation for Research and Educational Networking) TechTalk on calendaring. The page also lists links to other resources, including information about calendars being used by some other schools.