ABSTRACT

The Student Computing Services (SCS) group, under the direction of LaRose Edwards, has accomplished a tremendous feat with only a staff of three full time employees. LaRose and her group were seeing a rapid growth in student population, which brought with it an increase in student computing support issues. The main focus of their challenge was to leverage technology to ease the increase of student one-on-one questions while going from four FTE to three, stay within their budget and provide adequate hardware and software access while maintaining a high level of customer service. LaRose and her group answered the challenge in a very big way and in a way other campuses can benefit.

SCS analyzed their current situation and found the areas where they needed technology to help reduce the impact of an increased student population and related support. It was realized that many of the simple but necessary tasks needed by students could in fact be managed directly by the students themselves. What was needed was a way for students to have easy and secure access to the tools they would need to carry out those tasks.

Based on their analysis, the initial part of their plan was created by proposing that UCR students be allowed to personally update their different access accounts via a self-service model. SCS staff member Sharon Kidwell, working with other UCR Computing Units (Unix Group, Client/Server, etc.), has enabled students to use web-based forms to effect account changes. Students were provided easy access to their personal computer accounts and their associated account options via kiosks setup in various locations around student computer labs on campus. These kiosks are using wireless technology for greater flexibility and running Windows 2000 for improved security and access restrictions. The features available to the students are email address and username lookups, password resets and changes, account setups for Blackboard, Extension students and Alumni, to extend print quotas and to help with various account problems. This self-service model has significantly reduced the workload on the three full time SCS staff members while giving students the tools necessary to help themselves. In fact, by the end of the first quarter in use, 54% of all student helpdesk related inquiries were now being handled by the kiosks.

Another part of the plan was to design and implement a system allowing the part time student lab consultants and the full time staff members a way to communicate more effectively. LaRose’s group applied the IRC client software on their machines and effectively transformed the lag of phone-tag type calls to immediate responses. The SCS Staff chat room is a private IRC chat room maintained by staff member Jonathan Ocab. Access is restricted by IP numbers of only the staff computers and lab consultants’ workstations. The resulting benefits are many, not only can the staff members easily communicate and support each other between remote locations, but the consultants can work together to develop solutions to student problems in the labs. This also helps the consultants in labs who are without phones and lets the staff become a backup support to the more difficult issues.

An outcrop from the IRC chat room was the creation of an on-line Bulletin Board Forum accessible to all students via a sign on with their username and Permanent PIN number. Here UCR students can receive
assistance from SCS student lab consultants and staff. After login, the students post questions to the forum then read responses by the SCS group. The students can also browse other students’ questions and answers and the lab consultants have a fast and easy way to post their answers. Included in this is the SCS on-line knowledge base system comprised of a database of student questions. The knowledge base system is a database of student questions where lab consultants can record statistics of the questions that they are asked on duty. In addition, the knowledge base offers answers and troubleshooting tips to help the consultants more effectively assist the students.

To conclude, LaRose has found innovative solutions using technology to help leverage the offset of her small staff to an ever-increasing student population, while keeping a high level of customer service and satisfaction. And she has done it in a way other campuses can easily put into service.

PROJECT DESCRIPTION

UCR Student Computing Services (SCS) is in charge of four major computing labs and several minor labs for student use. Along with staff personnel, over thirty-five students are employed as Lab Consultants that monitor the computer labs during the open hours and provide direct assistance to students while in the labs.

In the Fall 2001 academic quarter, UCR SCS was presented with the dilemma of tighter budgets and the loss of personnel within the department. With a user support base of over fourteen thousand students, SCS found it necessary to restructure its operations in order to facilitate support services for such a high volume of users with reduced staff and finances.

Prior to the restructuring that took place in 2001-2002, SCS operated a Help Desk where students could visit on a walk-in basis for one-on-one consultation, call via phone, email, or visit on the web, to get various academic computing questions answered. Of course, one-on-one consultation proves to be tedious and less than efficient, especially considering the lack of staff support to run the Help Desk.

In order to address this issue, SCS found that the key to the loss of personnel and less funds was to discontinue one-on-one consultation with students for the most part, and divert the majority of questions to the SCS website and other resources that can be used to provide support for students.

Diverting students away from the physical Help Desk would be a task that would be accomplished in several ways:

• Focus more attention into maintaining the website with student computing support information.
• Increase training of lab consultants to provide more Help Desk style support to students.
• Develop and deploy of Kiosk computers in the computer labs, where students can do self-service account administration such as resetting an account password, increasing a print quota, or requesting a specialized account.
• Deploy a Support Forum or Web Bulletin Board where students can post questions and SCS staff and consultants can reply with answers
• Increase support efficiency by creating a support channel for SCS staff and consultants to communicate lab and support issues to all employees on duty, and by creating an employee Knowledge Base to assist consultants with support questions.
The SCS website at http://scs.ucr.edu has already provided more than ample user support for students regarding academic computing here at UCR. But SCS recognizes the extreme importance of the website in its support operations and has made it a priority to emphasize accuracy and quality of content on the site.

Since the SCS Help Desk would be in effect discontinuing one-on-one student support via office visits to the Help Desk, the Lab Consultants would be the direct face-to-face support for students who need help. Therefore, increased training has been deployed to keep the Lab Consultants well informed of all expected student questions, not only lab questions, but also Student Help Desk questions.

Kiosk computers are deployed in these four major computer labs on campus: Watkins, AGSM, Sprout, and Statistics Computer Lab. Running a web interface, students can select various self-service account forms:

- Lookup Username & Email Address
- Reset Your Password
- Change Your Password
- Reset Your Blackboard Password
- Need a Blackboard Account
- Add a Class to a Blackboard Account
- Need an Extension Account
- Need an Alumni Account
- Over Print Quota
- Miscellaneous Account Problems

Before, in order for students to get administrative assistance on NT accounts, email accounts, Blackboard/learn accounts, etc., they were required to visit the Help Desk and fill out paperwork and provide identification. Now, using a Kiosk computer, students are able to do self-service account administration by simply filling out the SSL encrypted online forms.

Another solution to the support restructuring is the deployment of a web based Bulletin Board. Using the vBulletin web software based on PHP & MySQL (http://www.vbulletin.com), a support forum (http://scs.ucr.edu/forum) was put into place to provide a place for students to post questions. The goal of the web forum was for students to post questions, where all SCS employees, staff and consultants, would be able to browse the forums, and, if a new question were posted, would be able to answer the question appropriately. Thus, any SCS employee at any time of day would be able to answer the respective question. There are over 35 employees in the SCS department who will possibly see the question in the forum, and this fact will increase the odds of the question being answered in a timely and appropriate fashion.

This Bulletin Board support forum has advantages over email support, which is typically only one person answering the email questions. If more than one person is fielding email questions for the Help Desk email accounts, the situation can lead to redundant support. One staff member may see the email and reply, and another staff member may see the email and also respond. Also, if the two Help Desk employees happen to answer with conflicting responses, there will be confusion for the student.

With a web based Bulletin Board for a support forum, questions and replies are viewable by everyone. So when a student posts a question and a Lab Consultant posts an answer, other SCS employees will see the reply to the question, and they can post additional answers or information if the original reply
was not a satisfactory or complete answer to the student’s question. This eliminates redundant replies to a student’s question and helps increase efficiency and accuracy.

To facilitate group communications between all Lab Consultants on duty in the computer labs at any given time as well as the SCS staff members, an Internet Relay Chat (IRC) server was deployed. Serving only connections from employee computers, the IRC server allowed a private channel to form where Lab Consultants working in each lab could communicate and collaborate with other consultants and staff on duty to solve current problems, issues, and questions that arise in the lab. The use of private channel for real-time group chat sessions helped in two ways. It enabled the 6-12 SCS employees on duty at a given time across all the labs to use each other as resources for supporting the students. Also, given the fact that some of the minor labs do not have campus phones in the lab, the use of an IRC server from group collaboration provides a means for the employees in the minor labs to communicate with the other labs.

The Help Desk staff previously recorded statistics regarding the amount of support traffic and the type of support offered to students. Since the Help Desk would no longer provide one-to-one support, the SCS staff would not necessarily record statistics. Thus, the Lab Consultants who are now trained to field Help Desk questions as well as computer lab questions would need to record statistics concerning Help Desk support. A Knowledge Data Base was deployed for internal SCS use. Running a web server with MySQL, SCS Lab Consultants would be able to tally up questions as students ask them. For example, if a student asks about how to connect to the UCR proxy server, the Lab Consultant fielding the question could go to the SCS Knowledge Data Base, locate the particular question based on defined categories or a built-in search engine, and record that particular question. Also, if the Lab Consultant does not know the correct answer to a question, a solution is provided for the Lab Consultant in the Knowledge Data Base.

**PROJECT BENCHMARKS**

<table>
<thead>
<tr>
<th>Kiosk Inquiry</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>Jan - Apr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need an Alumni Account</td>
<td>0</td>
<td>13</td>
<td>10</td>
<td>10</td>
<td>33</td>
</tr>
<tr>
<td>Add Class to Blackboard Account</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Need a Blackboard Account</td>
<td>0</td>
<td>24</td>
<td>9</td>
<td>37</td>
<td>70</td>
</tr>
<tr>
<td>Reset Blackboard Password</td>
<td>0</td>
<td>19</td>
<td>11</td>
<td>28</td>
<td>58</td>
</tr>
<tr>
<td>Need an Extension Account</td>
<td>0</td>
<td>17</td>
<td>12</td>
<td>19</td>
<td>48</td>
</tr>
<tr>
<td>Miscellaneous Account Problems</td>
<td>0</td>
<td>28</td>
<td>27</td>
<td>36</td>
<td>91</td>
</tr>
<tr>
<td>Lookup User Name or Email Account</td>
<td>3558</td>
<td>1428</td>
<td>1095</td>
<td>2521</td>
<td>8630</td>
</tr>
<tr>
<td>Reset Password</td>
<td>1323</td>
<td>692</td>
<td>601</td>
<td>1463</td>
<td>4088</td>
</tr>
<tr>
<td>Change Password</td>
<td>305</td>
<td>131</td>
<td>83</td>
<td>171</td>
<td>725</td>
</tr>
</tbody>
</table>
CUSTOMER SATISFACTION DATA

During Spring Quarter 2002 an informal survey was conducted to gauge usage of Student Computing Services' (SCS) kiosks and online forum. Questions were posed to determine what percentage of students was using the kiosks and forum, what the students were using them for, and how helpful they found these services to be. The results from our preliminary survey were as follows:

1. Prior to this survey 84% or respondents were already aware of the availability of SCS's kiosks. 22% were already aware of the availability of the online forum.
2. 45% of respondents had used the kiosks at least once. Of these, students had used the kiosks an average of four times.
3. The kiosks were primarily used for looking up account usernames and resetting passwords.
4. The average satisfaction rating was medium-high at 7 out of 10 where 1 was the least helpful and 10 was the most helpful.
5. 10% of respondents had used the forum at least once. Of these, students had used the forum an average of one time.
6. The forum was primarily used for reading posts.
7. The average satisfaction rating was medium at 5 out of 10 where 1 was the least helpful and 10 was the most helpful.

At present these statistics indicate a reasonably successful response to the kiosks. Given the recent nature of these implementations, it is expected that these statistics will continue to improve as more students become aware of the new services provided. In addition, we have recently expanded our promotion of the SCS forum in order to increase student awareness of its availability and features. Furthermore, feedback from student users was collected. From this feedback, a number of improvements and additions to both the SCS kiosks and forum were designed and recently implemented. These improvements, as well as continued development, should make these services even more useful to the students of UCR, encourage more students to use them more frequently to resolve their problems, and increasingly improve their satisfaction level with the assistance received.