ABSTRACT

On January 8, 2002 at 9:10 a.m., Professor Eugene Nothnagel did something that no one at UC Riverside had ever done before. The fact that what he was doing was new is not the noteworthy part of this story. What is worth noticing is that he was able to do something new and exciting with barely a trace of apprehension or trepidation. Dr. Nothnagel taught a class that morning to over 430 students in a brand new, highly automated teaching facility that we call University Lecture Hall 1000. He utilized almost every piece of equipment that morning and everything worked as expected. By 4:00 p.m. over 2200 students had attended a class in UNLH 1000 and by all accounts, opening day was a smashing success. The biggest problem that day was that the refrigerator containing a supply of bottled water for faculty was too cold and all of the water froze! The first day went so very well because of what transpired in the months leading up to that day and THAT is the big story.

Until that January morning, the largest classroom at UCR was a 420-seat venue situated in a movie theater that is provided in a shared-use arrangement with the theater’s operator. At 575 seats, UNLH 1000 is not only larger than any other classroom in UCR history, it is infinitely better equipped and more sophisticated. The room boasts nearly ¾ of million dollars in audio-visual equipment including a state-of-the-art computer controlled sound system, a three-screen projection system and electronic white-boards. Three 15” touch panels allow the instructor to control all aspects of sound, lighting and images.

This success story was built around a cooperative effort that effectively used resources from every corner of UCR’s Computing and Communications organization, as well as many other groups on campus. From programmers to administration staff and all the way up to the Associate Vice Chancellor of Computing…this was truly a team effort in the grandest of scope. Planning, preparation, and attention to detail helped pave the way for the success of this effort. Months before the “Grand Opening” of UNLH 1000, faculty members who would be teaching in the facility were given the opportunity to attend training sessions to learn about the room’s embedded technology and how to use it. Many hours were spent in “fine tuning” the technology based on feedback from the instructors who attended those sessions.

UNLH 1000 has been in use now for four months and it continues to impress everyone who teaches or attends classes in it. The innovative use of resources and the outstanding effort by all of those involved have allowed this “transition” to take place with little or no negative impact to faculty or students. Typically, transitions of this nature are subject to several types of challenges, not the least of which is overcoming the natural “fear of change” that all of us exhibit to one extent or another. The goal was to allow the faculty to move from smaller classrooms to larger ones without tapping into that fear and it is clear that, to a large degree, we were able to attain that goal.
PROJECT DESCRIPTION

Goals

The Computing and Communications organization became involved in the University Lecture Hall project near the end of the development cycle. Our involvement was limited to assuring that the technology in the facility would be ready for class by the beginning of the Winter Quarter, which was less than 90 days away from our first meeting with the Audio-Visual vendor. We had the following goals in mind:

- All technology-related equipment would be functioning and usable.
- Each instructor would have the opportunity to learn about the technology prior to teaching in the room.
- Each instructor would have the opportunity to try the room during a “dress rehearsal” session.
- A budget document would be created to outline the funds necessary to maintain the technology-related equipment.
- A team from Computing & Communications would learn the skills necessary to enable them to assist and support the use of the Instructional Technology components in the facility. We would need to become the “local experts” in a very short period of time.

The Facility

UNLH 1000, as UCR’s new 575-seat University Lecture Hall has become known, is outfitted with a very sophisticated audio and video system that is, arguably, the most advanced of it’s kind in Southern California. There are three projection systems that immerse the front of the room with a massive wall of video that stretches nearly the entire breadth of the theater. The rear-projected center screen is made of glass and is capable of displaying images in theater-style wide-screen fashion. The image from the center-screen projector is beamed first to a large mirror, which then reflects the image onto the rear of the glass screen. The center screen is flanked by two remotely controlled screens which, when not in use, can be hidden from view. Two projectors mounted high in the rear of the hall project their images onto these to conventional projection screens. The input for each of the three projectors can come from one or more of the following devices:

- DVD video player
- VHS video cassette recorder/player (2)
- High-end document camera
- Smart-Board electronic white-board system (3)
- 35mm to digital slide converter (2)
- Audio cassette recorder/player
- CD audio player
- Any laptop computer
- One of two desktop computers located in the “prep room” behind the stage.

There are three “smart-board” white-board systems mounted below the projection screens that allow instructors to project, in full color, whatever they write or draw onto any of the three boards. A single board can be projected onto all three screens or each board can be projected onto it’s own screen or in any combination desired.
The facility is capable of reproducing Dolby enhanced audio signals to enhance the audio portion of DVD’s and videotapes. There is also a wireless sound system that affords the instructor the freedom to roam around the whole facility while still being heard by all 575 class participants. If the instructor wishes to use computer output as part of his/her presentation, they can use one of Dell desktop computers or they can bring their own laptop and plug it into a podium receptacle. If they choose to use one of the “built-in” computers, a wireless keyboard and mouse are available, again to facilitate freedom of movement.

All of the equipment mentioned above is controlled by a fifteen-inch touch-panel screen mounted on the podium. There are identical panels in both the control room and the prep room. These panels allow the instructor (or an operator) to control all input devices, lighting, projectors, screens, and audio levels. The main functions of each input device can also be controlled. For example, a VHS tape can be rewound, paused, fast-forwarded, stopped, or started via the touch-panel. The podium touch-panel also generates “preview” images so the instructor can view input material before sending to one of the three screens.

The Challenges

There were several obstacles that had to be overcome for this project to become a success story:

- The short time period (less than 90 days) we had to get the room ready for classes.
- The building was still “under construction” during the time we had to complete our work.
- Numerous delays by the A/V contractor.
- The project was unlike any other we had undertaken in the past.
- Most of the faculty who were scheduled to teach in the facility had little or no experience teaching in such a large room.

The Process

Associate Vice-Chancellor of Computing and Communications, Chuck Rowley knew from the beginning that a team would need to be built that included members of his staff with different skill-sets and backgrounds. The initial C&C team consisted of:

Larry McGrath, Director, Computing Support Services, Computing & Communications  
Joel Nylander – Project Manager, Computing & Communications  
Israel Fletes – Manager, Media Services, Computing & Communications  
Pat Knapik – Associate Director, Media Resources, Computing & Communications  
Matt Giers – Programmer/Analyst, Computing & Communications  
Michael Kennedy - Programmer/Analyst, Computing & Communications  
Bart Kats - Programmer/Analyst, Computing & Communications

Each member of the team brought with them a skill necessary to complete the “puzzle”. No single member of the team could have successfully guided the project to completion, but as a whole, the team functioned extraordinarily well.
C&C first became involved in the project in mid-October, the project team met with Susan Carter, Director of the Center for Teaching Excellence (CTE). The CTE’s website describes the organization this way:

“The Center for Teaching Excellence is being created to ensure that, as UCR grows, we will continue to enhance our attention to effective undergraduate education as embodied in the teaching/learning process.”

“Among the major responsibilities of the Center are coordinating UCR’s activities related to excellence in instruction; collecting and disseminating information about teaching methodologies; coordinating the development and implementation of the “research across the curriculum” concept as an enactment of UCR’s vision of the fusion of teaching and research excellence; nurturing the development and enrichment of UCR’s culture of inquiry; and coordinating a faculty mentor program oriented to instructional quality.”

The goals of the CTE corresponded well with the goals of the project. As it related to this project, Susan Carter’s organization would become the conduit for information flow between the C&C team and the faculty who would be teaching in the facility.

We realized that providing faculty members with as much training as possible would be one of the keys to success and we set about to make that vision a reality. A notice was sent to faculty offering a “tour” of UNLH 1000. We wanted to introduce them to the room in a casual and non-threatening way. This relatively informal gathering would also give the team the opportunity to gather feedback from faculty. The team wanted to know what the faculty found pleasing about the facility, as well as what possible challenges they could foresee. Planning the tour proved to be particularly challenging due to having to find a scheduling match between the team members, the facility (which was still partially under construction), and the faculty members. The sessions were held in mid-November and were very successful. As a result of these sessions, valuable suggestions were offered and many were acted upon.

In addition to the “general” sessions, the team also facilitated “dress rehearsal” sessions for each instructor who was scheduled to begin using the facility in the Winter Quarter. These sessions gave faculty members an opportunity to test each piece of equipment and make sure they understood how everything functioned. It also allowed them to bring in any electronic course material they would be using to verify that they could present their offerings using the existing equipment.

We even had a faculty member who volunteered to teach the remaining portion of his Fall Quarter class in the “almost” completed classroom. This proved to be an invaluable part of the overall process. During these sessions, the instructor solicited feedback from his students and he received many positive comments and many constructive ideas. The team learned a great deal about what worked and what didn’t and a large amount of “fine tuning” was accomplished as a result of what was discovered during these “pioneering” class sessions.

Classes began on January 4th, 2002. There were very few problems that first day and in the weeks that followed. Every instructor who taught in the room had great things to say about the new facility. The launch of UNLH 1000 was an unqualified success!
Success Factors

Team Synergy

• Skill-set synergies
• “Human factor” synergies

Faculty involvement

• Faculty comments and feedback
• Faculty enthusiasm and interest in the facility
• Volunteerism

Team Dedication

• Desire to create a “success story”
• “Let’s get the job done” attitude

Constant communication

Communication between…

• Team members and vendors
• Team members and faculty
• Team members and other team members
• Team members and the Center for Teaching Excellence
• Team members and C&C management
• C&C management and University Administration
• Team members and the Registrar’s Office

Attention to Detail

• “Fine tuning” of devices
• Paying attention to feedback and acting positively on it
• “Preparing for success” – The team didn’t wait for something good to happen, they MADE something good happen.

Conclusion

The success of this project was evident not in looking at what happened, but rather by realizing what didn’t. There was a huge potential for failure due to the many challenges that presented themselves throughout the journey. Each challenge was met and each obstacle overcome in a steady, “tortoise vs. hare” manner. Each team member pulled their own weight and sometimes more. The process was the star of this show and UNLH 1000 was the stage.
CUSTOMER SATISFACTION DATA

Comments from Faculty:

Dr. Richard Sutch, Professor of Economics and Director, Center for Social and Economics Policy Research

“(the team) worked long and hard to see that the lecture facility was up and running, bug free, on day one. It was. Particularly important to me, as one of the first faculty to teach in UNLH 1000 and the first to teach to a full capacity room of 574 students, was (the team’s) understanding of and patience with the anxieties of the faculty about the new venue. There is so much that is innovative and unique in UNLH that there was much that might have gone wrong. Had any of the major systems (sound, projection, lighting, safety) failed to function, control of the class could easily have been lost.”

“(the team) was a great asset in the run-up to the first lecture and the sustained support for me and my TA’s throughout the term. Every faculty member involved with the UNLH launch was surprised that it actually came off without a major hitch. The surprise was not due to any lack of confidence…but to the complexity of the task and the tight schedule we were all operating under”

Dr. Eugene Nothnagel, Professor of Plant Physiology & Plant Physiologist, Chair

“Through the efforts of several individuals…this instructional technology was presented to the instructors in a user-friendly manner.”

“…my teaching partner and I requested and received a special session…just before the quarter started, to learn about the recently added capabilities. In addition, assistance was provided throughout the quarter as needed.”

“Although the finishing construction continued for several weeks after the quarter was underway, and fine tuning of instructional technology continued, the Biology 5A class was very successful, as judged by the highest proportion of A grades and lowest proportion of D and F grades in years. It is particularly worth noting that in such a large class, the tolerance for problems with instructional technology is very low. As soon as a problem comes up during a lecture, the students immediately become restless, and it is very difficult to regain control of the class. The larger the enrollment in the class, the greater the problem. With 465 students, the situation is ripe for disaster. I was very pleased however, that there were precious few problems with the instructional technology, and no disasters at all. (the team) did a great job of bringing UNLH 1000 on line, training the instructors, and staying with us throughout the quarter to insure success.”