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ABSTRACT

In the fall of 2000, the University of the Incarnate Word, a small, Catholic, liberal arts university located in San Antonio, Texas became the largest IBM ThinkPad University in the South. At present, 2,000 laptops have been distributed to students and faculty. This paper explains the implementation process and the components that made this a successful program. Commitment from the University's leadership, involved corporate partners, a broad-based planning team, effective communication, faculty training and a supportive infrastructure lead to a positive first year experience for students. The paper discusses problems that were encountered and makes recommendations to institutions that might be considering such an initiative. (Author)

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Implementing a Laptop Program at a Small, Liberal Arts University

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Abstract:

In the fall of 2000, the University of the Incarnate Word, a small, Catholic, liberal arts university located in San Antonio, Texas became the largest IBM ThinkPad University in the South. At present, 2000 laptops have been distributed to students and faculty. This paper will explain the implementation process and the components that made this a successful program. Commitment from the University leadership, involved corporate partners, a broad-based planning team, effective communication, faculty training and a supportive infrastructure lead to a positive first year experience for students. The paper discusses problems that were encountered and makes recommendations to institutions that might be considering such an initiative.

Introduction:

In the fall of 2000, the University of the Incarnate Word became the largest IBM ThinkPad University in the South. At present, 2000 laptops have been distributed to students and faculty. This paper will explain the implementation process and the components that made this a successful program. Commitment from the University leadership, involved corporate partners, a broad-based planning team, effective communication, faculty training and a supportive infrastructure lead to a positive first year experience for students.

The University of the Incarnate Word (UIW) is a small, Catholic, liberal arts university located in San Antonio, Texas. The University enrolls 4,283 students, of which 3,519 are undergraduates. Seventy-one percent of UIW's student population can be designated as minority. The student population reflects that of the city, with the majority coming from Hispanic (54%) households. Most of the students are first-generation college attendees who use financial aid to pay for their education (77%). The University qualifies as a Hispanic Serving Institution.

Based on our student demographics, the UIW leadership has had a great concern about the increasing "digital divide" between the Anglo and the minority populations. In August 2000, the U.S. Commerce Department reported in *Falling Through the Net: Toward Digital Inclusion*, that the national average for computer ownership was 51%, but the penetration rate was only 33.7% for Hispanics households. The report indicated that the most Hispanics access Internet services from schools, libraries and work rather than from home. (Only 16.1 % of Hispanics access the Internet from home.) With technology use patterns such as this, if UIW did not provide the students it serves with access to technology, who would?

At the University of the Incarnate Word, technology literacy is seen an important part of the liberal arts core curriculum. Students are required to take a course in computer literacy and the integration of technology into courses in the major is standard instructional practice. For many years, there has been budgetary support for infrastructure improvements, the creation of computer labs and for technology skill development among faculty. Still, it had been difficult to keep up with the increasing demand for access to technology. The student to computer ratio was high, there were not enough staff to keep labs open 24/7 and there was the expense of refreshing the technology every 3 years. Requiring students to have laptops seemed like a good solution to these problems. The question raised, however, was how could the program be affordable for our students who already have trouble paying tuition?

Initial Planning

In the fall of 1999, a Laptop Planning Team made up of faculty, administrators, staff and students was charged with investigating the potential of a pilot program that mandated laptop purchases for all junior and senior business majors (500 students). The Dean of the Business School was trying to respond to a recent employer survey, which indicated that employers considered technology skills a major factor when hiring business school graduates. The Laptop Planning Team identified three goals for the program: (1) put standardized technology into the hands of the students; (2) embed technology into the learning experience; and (3) give students the required technological skills to make them successful after graduation.

Initially, the team used the Internet and telephone interviews to survey other universities that had laptop programs. The Dean and the Chief Information Officer visited the small, Catholic St. Gregory's University in Shawnee, Oklahoma, which has had laptop program since 1997. Major laptop vendors (IBM, Toshiba, Dell, Gateway, Compaq) were asked to do presentations. The Laptop Planning Team prepared a report for UIW's President. After reviewing the recommendations, he decided to expand the pilot beyond the business students to ALL fulltime sophomores and juniors, an estimated 800 students in the Fall 2000.

Through a competitive procurement process, in which a formal request for proposal was prepared and sent to each of the five major vendors, IBM was selected as UIW's corporate partner. IBM's proposal included leasing the laptop computers over a 3-year period, technical support for broken computers, and insurance in case of theft. The laptop chosen was sufficiently robust to connect to the campus network and to run standardized productivity software. IBM offered additional support in sharing their experience with other ThinkPad universities. They provided such assistance as sample letters to students and parents, examples of laptop orientation materials and information on policies and strategies used by other schools. In addition, IBM representatives became a part of our Laptop Planning Team. Our IBM representative drove down from Austin every two weeks to attend the team meetings.

The team determined that each student would receive a laptop, a printer and a backpack. This would eliminate the need to install networked printing stations around campus. In addition, each laptop would have a standard software installation. A Microsoft Campus site license was purchased so that faculty could expect all students to have the basic productivity tools. Standardizing hardware and software would allow the technical support staff to limit the problems that typically occur when dealing with differing configurations. The need for more technical staff was factored into the plan. The team estimated the cost of the lease and the necessary support to be about \$1,100 per year. The University leadership made a major commitment to finance the program by providing a \$300 technology grant each semester so that students had to only pay \$500 per year for their laptop. At the end of 3 years, students would be able to purchase the laptop for \$1. IBM has reported that UIW has the lowest priced ThinkPad University program in the United States.

The University Board of Trustees approved the plan in the spring of 2000 for implementation that fall. Getting the word out to the students about the program was a challenge. Students were informed through various means, including direct mail, student forums and via a web site (<http://www.uiwtx.edu/~Laptop>). A Laptop Appeals committee was established to deal with students who felt that they should be exempt from the program. Currently, all recruitment literature has been revised to include the laptop program and the University extensively advertises itself as an IBM ThinkPad University.

Laptop Deployment

During the summer months of the first year, the laptop orientation session was planned. It was planned as a 2-hour session where students would be given their laptops, check inventory, sign the leasing agreement, plug in and connect to the network, set up their machine for networking and e-mail and informed of computer policies and services. The sessions would be held in a wired lecture hall that held 65 students. Our intent was to keep the distribution session small so that there would be enough technical support. Students had to register for the sessions at the laptop web site. The orientations were scheduled for the week before school started. Unfortunately, due to a delay in manufacturing the new ThinkPad model, these sessions had to be delayed until mid-September. Students were contacted by mail and by phone concerning the delay. To make up for the situation, IBM agreed to provide a wireless card for free with each of the laptops.

The laptops were distributed in 18 orientation sessions, which spread over a 4-week period. Representatives from the technology services, financial aid, business office, student body and IBM manned the distribution stations and served as technical support. One lesson the team learned was that not all students are willing to pick up their laptops, even though they are being charged for them. Many missed the sessions for which they had registered. Therefore, additional small orientations had to be scheduled. There were also those who delayed until their appeal to the Laptop Appeals Committee was heard.

Preparing the Faculty

The student laptop distribution was only part of the University plan. During the first year of the program, all 138-fulltime faculty received laptops. A Hispanic Serving Institution Title V grant allowed UIW to offer extensive technology training to faculty during the summers of 2000 and 2001. More than 50% of the faculty have

participated in the Title V training. On-going training during the regular school year, a technology fellowship program and instructional technology support staff have helped faculty to integrate the laptops into their teaching.

Another means of pushing integration has been the implementation of Blackboard 5 (Level One), a course management software package. The product has proven to be easy to learn; and has been adopted by an overwhelming number of faculty (62%). Three 2-hour workshops introduced 60 faculty to Blackboard before the Spring 2001 semester. Last summer 40 faculty participated in a weeklong seminar, which focused on online pedagogy as well as provided hands-on experience with Blackboard. At present, there are 2,000 students taking 120 Blackboard enhanced courses (an 82% increase from the spring semester). The University intends to migrate to the portal solution, Blackboard 5.5 (Level 2), during the Spring 2002 semester. Blackboard is changing the instructional environment, and the way in which instructors and students communicate. With the portal product, the University expects to draw the entire community to one place where students, faculty and staff go to find information, to communicate and to get support.

Infrastructure & Support

Having 2000 additional computers on campus has forced UIW to enhance the infrastructure - not only in terms of the network, but also in terms of software and technical personnel. In the summer of 2000, the campus was 48% wired; now it is 100% wired. A decision was also made to implement wireless networking in the library, in classroom buildings, and in student gathering areas. The University expects to spend \$350,000 over a two-year period to make the entire campus wireless. Recently, the University was awarded a Texas Infrastructure Fund grant of \$100,000 to offset some of the cost. Shortly after the laptops were distributed, the network was working at 100% capacity. Students were taking up all the bandwidth by downloading music, videos and making international phone calls over the Internet. The University has since had to add a packet shaper to prioritize the amount of bandwidth various applications use on the network. A virtual private network has been installed to increase security. The additional strain on the network has caused the University to increase the number of T-1 lines from 1 to 3. Finally, plans are being made to purchase a network sniffer to help the infrastructure staff keep track of how the network is being used.

A newly established Technical Support Services now employs 3 fulltime staff and 10 student workers to support the laptops. Clearly the number of staff pales in comparison with other institutions, but at this point, the workload is manageable. When the staff cannot fix the equipment, it is sent to IBM for repair. However, help desk hours are limited to daytime hours during the standard workweek. To augment support, Technology Services is developing online resources and tutorials so that laptop users can get help 24/7 via the Internet. Building renovations were completed to create a space for the technicians and for storage of laptops. A walk up help desk area was created and a gated room was outfitted with wire mesh on the walls and ceiling so that large quantities of laptops could be securely stored.

In addition to office renovations, changes are planned for the classrooms. A laptop classroom is being created with a counter that surrounds the perimeter of the room with data jacks and plugs for 25 laptops. With laptops in the hands of students and faculty, the requests for data projectors in the classrooms have increased. This year \$50,000 from the Title V grant will provide the University with projectors for our main classroom building. As new facilities are planned, projectors and wiring are included in the construction budget. Although the laptops have batteries, providing electricity to old classrooms has become a major concern from faculty who want students to bring their laptops to class.

Problems

Of course, there have been problems with the implementation that were not anticipated. During the first year, student attitudes toward the program were not as positive as expected. Some students refused to pick up their laptops. Many complained openly in student forums and in the school newspaper. However, there has been a change in attitude during the second year. Students were much more excited when receiving their laptops. As an indication, this year 71% of the freshmen opted to get a laptop rather than wait until they are sophomores. Other complaints have come from graduate students and adult degree completion program students who were not eligible for the program but who wanted laptops. IBM has now established a direct purchase program for these students as well as for faculty, staff and alumni. Students who received laptops last year have complained because this year's model is faster and has more capacity. They want a way to return their model and get the newest one. A two-year refresh program would help with this problem, but the University is not prepared to commit to this change at this time.

Students, who graduate or withdraw from UIW, can purchase their laptop. Unfortunately, some students drop out without notification and without returning the laptop. In the orientation, students are warned that felony charges will be filed against them if they fail to return their laptops upon leaving school. The practice is to send these students two letters requesting the return of the laptop and a final certified letter demanding the laptop back. The first year there were 12 such incidents. Our response was to file charges with the police department and the district attorney's office. Regrettably, the local district attorney has decided that criminal intent was not evident in these cases and that the matter should be handled in civil court. Complicating matters further, is the fact that laptops are being leased from IBM, who actually owns the laptops. Admittedly, the University does not yet have a successful and easy solution to this problem.

The University has found a solution for what to do with the returned laptops. The University has offered the leasing option for the "used" laptops to departments within the institution. This allows them to spread the cost of the laptops over two budgetary years, making it more affordable. The laptops are insured for theft and have the IBM asset protection plan, which makes the offer more attractive. The adult degree completion program and the high schools that are associated with UIW are planning to outfit several laptop labs using these machines.

Lessons Learned

The UIW experience has much to offer any institution that is interested in implementing a laptop program. The UIW Laptop Planning Team could offer this advice.

1. Form a planning team made up of representatives from all of the university constituencies who are impacted by the program. Expect to meet regularly through out the year.
2. Research what other schools have done and do site visits to schools that are similar in size and budget.
3. Carefully prepare a request for proposals for laptop vendors that allow the team to make comparisons. Look for vendors that are willing to do more than just sell laptops at a good price. Consider experience, support and commitment. Look for a service plan and a way to insure the equipment.
4. Standardize the hardware and software selection so that it is easier to integrate into the classroom experience and so that it easier to service.
5. Use a variety of methods to inform students and parents about the project. Expect complaints about the program and develop mechanisms for appeals.
6. Prepare the faculty by giving them the laptops first and by providing training to support the integration.
7. Expect to upgrade the infrastructure. The students will be using the network in ways that will eat up bandwidth.
8. Expand the technical support services on campus. Do not put together a plan without making this a part of the budget.
9. Spend time on the orientation plans. More time spent with the student during orientation means less time spent on service problems later.
10. Develop accessible instructional materials to help students use the technology. Do not expect them to pick it up on their own or to get it in class.
11. Find a killer application such as Blackboard to push the use of technology into the classroom and into the lives of the university community.
12. Plan for classroom arrangements and technology to support students and faculty taking laptops into the classrooms.
13. Develop policies to handle the problems such as non-returned laptops and acceptable computer use.
14. Be patient and flexible. Changes do not occur overnight and some unanticipated problem will always come up.

The University is now in its second year of the laptop program. Despite the problems that have occurred, the University leadership is committed to keeping the program. The mission of the institution states that "The University is committed to educational excellence..." and is "open to thoughtful innovation that serves ever more effectively the spiritual and material needs of people." The laptop program is supportive of this mission. It puts technology in the hands of students, who otherwise would not have access. Laptop ownership gives students the tools they need to complete their academic programs and allows them to develop the skills needed to compete when they leave the institution.

Reference

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