

## **College of Business and Economics (CBE) Wireless Laptop Initiative**

These are the steps, processes, tips, or insights that the College of Business & Economics made or took into consideration before implementing the wireless laptop initiative. They are not in any particular order but we felt all areas should be taken into consideration to provide the utmost possible for our students, faculty, and staff.

### **Initiative Steps**

1. We started the initiative with strong support from the Dean. Due to the change in culture our organization would possibly undergo from effects of the initiative, we needed the directive to come from the top.
2. We started small. We have only implemented it thus far on our MBA students. This is a segment of about 100 students.
3. The MBA students (who the initiative has been for thus far) were brought together and asked for their opinions. They had a strong desire for the implementation and have supported it.
4. We prepared faculty and staff by holding meetings to address concerns.
5. We created a document with ideas for faculty to use in implementing new technologies into their classrooms: increasing their options with selections that vary from very simple to complex. We have provided feedback, training, and assistance along the way to help them through the process of change.
6. A meeting with purchasing was made to validate the purchasing process for students, faculty, and staff - all WSU affiliates can participate in the offers provided. Purchasing directed that there could be no preferred vendors, and only State contracted vendors would be allowed to compete. No advertising for a vendor can be conducted. Students will not be required to purchase from a specified vendor - hardware and software recommendations will be provided, but not required, to not favor any one vendor.
7. The registrar's office concluded that including the cost of equipment in tuition could not be done without lobbying Olympia so tuition would not be changed. Fees would not be applied.
8. State contracted vendors do not offer leasing to students - only to the university. The CBE could not manage the collection of the lease payments from students as this would have to be funneled through the registrar's office. No guarantee of payment or direct tuition deducted could be made from student's accounts by the registrar. Based on the lack of confidence in collecting lease payments, leasing options for students through the CBE were not pursued.
9. Financial Aid was contacted for information and awareness purposes. Financial aid is available for computer purchases for students qualifying for financial aid. A one time loan over the life of a student's career can be obtained for \$2500.00.

10. The requirements for the laptops were determined and three basic model types were chosen: light weight model, standard user model, and power user model. In some instances, where vendors offered them, tablet computers were included. Both wireless and Ethernet cards were mandatory in the recommendation. Both 802.11b and 802.11g protocols had to be available, as 802.11a is not compatible with the current WSU wireless network. G was required because having only b in a b/g environment slows the network traffic down. A three year warrantee had to be offered as well as a maximum service response time, to the onsite location, of 48 hours. A network operation system using a Microsoft platform was chosen as optimal for accessing both network resources and was a requirement by default to support all the various CBE software packages.
11. State contracted PC vendors were approached for several purposes. The first purpose was to determine the vendor model types that would fit the requirements and to determine if the product could be serviced by the vendor within 48 hours in the remote location of Pullman. A three year warranty and two day turn-around time was mandatory. The second was to determine if cost benefits could be achieved for students based on the specific requirements proposed for the 3 types of laptops (standard user, power user, and light weight notebook - in some cases tablets are also provided). The third was to look into potential services that the College could offer through the vendor for students. Dell and HP have both been able to meet the requests with the 24 hour repair guarantee, the offer to discount professional laptop models for students, and the potential to become an authorized service provider for students. CBE did not discriminate based on the initiatives hardware and software recommendations and listed the other state vendors. However these vendors did not provide specific discounts for WSU affiliates and were not able to provide the recommended requirements for the initiative - they are general websites offered by each corporation respectfully.
12. CBE became a Dell authorized service center to accommodate students as well as the CBE faculty and staff - CBE has primarily purchased Dell laptops and desktops for the past 4 years. However after becoming a Dell authorized repair shop, CBE did a cost benefit analysis and the Dell warranty service was not renewed. (For both the Dell or HP service contracts a minimum of 250 machines per year need to be serviced to break even on expenses not including labor: CBE serviced 18 Dells in the first year. Due to the fast turn around time for both Dell or HP on-site service CBE did not renew.)
13. A laptop recommendation was made public to all students via student publications, CBE publications, faculty, advisors, and various CBE faculty and staff. The MBA students were notified of the impending requirement via the MBA Association, the afore mentioned methods for all students, and via both WSU and CBE graduate programs.
14. Currently enrolled or accepted MBA students for Fall 2003 were grandfathered in: students already in the program fell outside of the requirement although a strong recommendation did apply. Students applying for Spring semester 2004 or subsequent semesters fell under the requirement.

15. CBE had the requirement officially listed in the university program catalog as a program requirement - via the catalog committee in Faculty Senate.
16. The Dean started an award program to reward faculty who implement new ways to teach, specifically using interactive pedagogies. This was not primarily designed for the laptop initiative, but served as a great motivator for it.
17. The wireless infrastructure was put in place, with a high density site survey done to verify the depth of infrastructure necessary was adequate. Failures here would cause interruptions in service, reducing effectiveness in classes, potentially killing the initiative. Connections in high traffic areas and classrooms received priority attention with connections sustaining up to 40+ students concurrently.
18. A web site with details on the initiative was made public:  
<http://www.cbe.wsu.edu/LaptopInitiative/index.html>
19. Wireless laptop setup seminars were facilitated through CBE in Todd at the beginning of each semester. They continue to be held at no charge for students by WSU Student Computing Services (SCS). This has significantly helped the student body to setup their laptops in a constructive step-by-step process, they are all set up the same, and they are shown how to access university or college resources simultaneously. It has also assisted in reducing the volume of individual setups requested of SCS. CBE also provides handouts with instructions on how to access CBE network software, printers, or other resources.
20. Education to advisors, students, faculty, and both internal and external organizations was begun. (SCS, IT, Financial Aid, Purchasing, incoming students, media advertisements and bulletins, recruiting, alumni, donors, etc...)
21. CBE does not service the laptops for either hardware or software. WSU IT, via SCS, was contacted and agreed to cover this area at no charge to CBE or to the students.
22. Power in specific classrooms was a consideration, and in some cases implemented, for accommodating courses where students had needs for convenient power access.
23. A portable laptop cart/lab was purchased to assist faculty in implementing technology into their courses in the interim of the initiative when instructors face the "have and have nots". It has also functioned for introducing technology into classrooms not currently equipped, and for preparing undergrad students for the experience. (35 laptops were donated)
24. Ongoing:
  - a. Furthering the initiative to other CBE programs
  - b. Reducing dependency on labs by making more wireless resources available
  - c. Increasing collaborations amongst students in and outside of courses
  - d. Furthering involvement with SCS and IT

- e. Looking into alternate ways to provide software and technology resources for easier student, faculty, and staff access. This includes investigations into standardizing software in multiple programs, software provided with the book, software flexible for network or local installations, full CBE site licensing, MSDNAA, terminal services, specialized pricing from distributors available for student purchase, online or Internet based versions of software, network printing, etc...
  - i. Visual Studio.NET, One Note, Visio, Project, and other programs have been donated for free for students, faculty, and staff from Microsoft through the MSDNAA program.
  - ii. Microsoft has provided special pricing for Microsoft Office 2003 Professional - students only - for around \$65.00.
  - iii. E-academy offers SPSS and Minitab software packages for students to lease by semester at highly discounted prices

**Insights or Tips that we came across:**

1. Make sure that the chosen operating system is compatible for the majority of software used in the organization. In CBE the recommendation is Windows XP (network OS) or they will not be able to access some of the universities network resources.
2. Getting computers configured all exactly the same takes an image. The image only works on machines with specific hardware components. CBE was unable to obtain a satisfactory solution to make all the computers the same without enforcing a specific laptop manufacturer and computer model. Without lobbying Olympia, students purchasing a computer as part of their tuition from the university would be financially unrecoverable. The state does not require a student to pay tuition for anything besides books, housing, and courses. CBE did not wish to pursue enforcement of computer purchases on their students so configuring computers to be identical for students was not feasible.
3. A consideration is a course fee to rent the technology a semester at a time - however CBE would have to absorb the cost upfront, carry insurance, support the computers for service and repair, and recoup costs. CBE did not find an effective way to do this as students were not required by law to fulfill this financial obligation. If CBE implemented this as a fee, CBE would have no way to recover immediate costs if a student did not, or could not, pay.
4. Computer companies do not lease computers to students very often, if at all. They will lease them to universities; however CBE would have to recover costs and would have to service and support leased equipment.
5. CBE has given a general recommendation for hardware and software, provided faculty with ideas and incentives, facilitated student access to WSU and college resources, and have let the pressure from those that have laptops win over students that do not. It is quickly becoming a more accepted form of pedagogy in the classroom. CBE did not make requirements on any faculty nor did CBE mandate technology be implemented. CBE only made recommendations to prevent a resistance to the initiative from forming.

**Looking into how the Business and Economics College implemented their requirement for students to provide their own laptops...**

1. The pursuit of the initiative started in January of 2003. The initiative was adopted by the catalog committee in February 2004. The first semester for the initiative to be in full effect was Fall 2004. Adoption has been accepted faster than expected and the initiative is starting to move forward in other areas of the college and university.
2. We had a top down leadership approach and a student majority consensus, with full support from the MBA Association.
3. We did not tell faculty how to teach or what to use. We tried to introduce ideas... Many were somewhat involved with technology already. (Class web sites, power point presentations, Internet research projects, simulation games, etc..) Some others opted to come on board on their own and use MSDNAA software (Microsoft Visio for charting/diagramming or Microsoft Project for project management). Several have chosen to modify their courses for the grants offered by the Dean. A few are still not there yet. It is a slow process and we have found the most effective methods come from the excitement and/or push from their peers. However, we are very happy with the adoption rate our faculty members have taken.
4. We went to the Faculty Senate with the following request:
  - a. requirement for MBA students
  - b. recommended for other CBE programs
  - c. no manufacturer specified but a list of specs provided.
5. The Purchasing division/office was very concerned that the College make sure that no "specific" vendors were specified. CBE used the state list of vendor contracts.
6. Students are expected to provide the operating system and Office software. CBE provides access to some software (i.e., Minitab and SPSS) via a network server. The university provides free antivirus software and other applications through the MSDNAA program.
7. The Operating System does need to be a network operating system. We gave an advisory to students to let them know that the software the college uses is based on a Microsoft operating system platform, however we do not tell them that they can not use Macintosh or Unix. It is at their discretion.
8. Recommendations CBE makes are based on vendors that provide hardware technical support provided from the vendor on a 24-48 hour turnaround. Students are responsible for their own hardware repairs but recommendations CBE make also include a 3 year on-site warranty from the hardware vendor.
9. WSU Student Computing Services sets up each student's laptop at no charge with the WSU wireless VPN. WSU provides the wireless network and provides support for the wireless connection.
10. CBE facilitates and hosts the SCS wireless VPN seminar for the MBA students. SCS is the organization that provides and executes the seminar.

11. CBE does not support student hardware or software issues. The only exception for this would be a student having an issue associated with network software provided by the college.

**Issues or "red flags" are:**

1. It is important to get students and faculty to buy into the initiative. This could potentially be a huge stumbling block. If faculty members do not enable the students to utilize their laptops, it will not be successful. Some technology needs to be integrated into their curriculums.
2. Faculty can be concerned about building and maintaining course materials and the time required to learn and implement new technology.
  - a. CBE faculty use WebCT and Internet research to aid with the mechanics of curriculum and content.
  - b. MSDNAA has also aided with providing free software tools for faculty and student use in curriculums.
3. Given the nature of the software and data files that CBE students would be working with, it is feasible to use the wireless option for collaborative classroom efforts, but practical experience would indicate that laptops have Gig Ethernet connections for studio or imagery work.

<http://www.cbe.wsu.edu/LaptopInitiative/index.html>