

One-to-One Innovation

Lawrence Technological University readies its students for the real world with notebook computers and tablet PCs.



Bill Wachob
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Lawrence Technological University has such a rich heritage in innovation that it should not come as a surprise that the university was among the first to embrace one-to-one computing.

Alumni have invented everything from the first rear-facing child safety seat to keyless entry door locks on cars. Microsoft CEO Steve Ballmer studied for a year there while still in high school. More recently, university researchers have led the charge in using new materials to build longer-lasting bridges and developing new materials to help the U.S. military strengthen its vehicles and buildings against attacks or natural disasters.

The 75-year-old private university in Southfield, Mich., began equipping undergraduate students with notebook computers in 1999 to provide them with the best tools and best education possible, so they can lead the next generation of innovation. The notebook computer program began with a pilot project of 100 students and a small wireless network, which led to a full computer rollout to freshmen and a campus-wide Wi-Fi network in 2000.

“Our university slogan is ‘leadership through theory and practice,’ and that’s where the computers fit in. The students take advantage of discipline-specific software tools, not just the student versions but the true professional versions,” says Lawrence Tech’s IT director Bill Wachob. “When they graduate, we want them to step right into the companies they join and contribute right away.”

The computer initiative serves dual purposes: It not only prepares students for real-world jobs, but it’s also a recruiting tool to attract students to Lawrence Technological University, Wachob says. Like other communities, the Detroit area is full of competing universities, so the one-to-one program is an incentive for students to enroll at Lawrence Tech, he says.

The concept of giving one computer to every student is a popular trend throughout education. A report by the Center for Digital Education in Folsom, Calif., has found that students want technology in their classrooms, from Wi-Fi to the ability to communicate with fellow students in online discussion forums. The computer initiative motivates students to learn; provides access to online resources and communications, such as e-mail; and reduces the need for computer labs, which can cut university costs, the report finds.

Some colleges with one-to-one programs standardize on computers but require students to purchase them on their own. Lawrence Tech, however, incorporates the price of computers as part of tuition. The university purchases and manages a fleet of about 3,500 notebook computers for its undergraduate students, faculty and some staff members. Every two to three years, the IT department purchases new computers to ensure the technology doesn’t get too old and remains state of the art.

Lawrence Tech has ironed out many of the processes needed to run a one-to-one computer program, from handing out computers to help-desk support. Nevertheless, the university still experiments with its computer choices. Last summer, it was time to refresh 1,600 notebook computers in its one-to-one program, and for the first time, the school deployed tablet PCs.

“There are many challenges universities have to overcome when implementing a mandatory one-to-one program, but Lawrence Tech has a well-run program with the notebook being one of the key components,” says CDW•G field account executive Todd Havey.

The university, whose core disciplines are engineering, architecture and design, business and IT management, and arts and sciences, has decided to standardize on tablets through a phased approach. Last fall, the IT department purchased 500 Lenovo X60 tablets for most of its incoming freshmen and instructors who teach freshman classes.

The university also purchased 1,100 regular notebooks — Lenovo T60s — for its older students, freshmen and faculty in LTU’s College of Architecture and Design, whose administrators balked at tablets for its

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The tablets also improve classroom instruction. Lawrence Tech is deploying a free application, called Classroom Presenter, which allows professors and students to work collaboratively. The application, created by the University of Washington, allows professors to project a PowerPoint presentation to a projection screen in front of the class, as well as onto their students' tablets. The students, in turn, can jot notes on their copy of the PowerPoint presentation. In addition, students can use the tablets to send feedback to faculty in real time, such as submitting answers to a question.

Professors initially had a tough time adjusting to the smaller screen size, but now they're fine with tablets because of the many educational benefits, Wachob says. The university provided training last year, so faculty could take advantage of the tablets in class.

“We're reinventing teaching and learning,” he says. “One instructor who used Classroom Presenter the other day was beaming.”

Running a Program

The purchase process began last January when LTU's IT department polled faculty from each discipline and asked what their computer requirements are. The IT department shared that information with PC vendors and met with the vendors to take a look at their latest computer models. In April, the university sent out a request for proposal and chose Lenovo as its vendor in mid-May.

In choosing the specs, Wachob purchased notebooks and tablets with 2GB of RAM because many of its students will run memory-intensive applications. Computer engineering students, for example, will use VMware virtualization software so they can write and test applications using the Linux and Solaris operating systems.

Wachob also purchased Microsoft Windows Vista Business licenses. Microsoft, however, allowed him to downgrade to XP instead because many of the university's older notebooks still run XP. This year, when the university refreshes its older machines, the IT staff will upgrade to Vista, he says.

In June, the IT department built five software images for the different disciplines on campus. Lawrence Tech ordered the computers in July, and Lenovo shipped the computers with all the images installed. The IT department distributed the computers to students when school started and will collect them from the students when the school year ends.

The IT staff — made up of 17 full-time professionals, six of whom work on the notebook program — is currently pursuing their Lenovo certifications and will maintain the Lenovo computers themselves. Through a self-maintenance program, Lenovo will send parts overnight to the IT department and will pay IT staffers a small sum to make the repairs.

The university keeps about 10 to 20 Lenovo notebook computers and tablets on hand as loaners. But several months into its Lenovo deployment, the university hasn't had much need for the loaners.

“The machines have been very reliable,” Wachob says.

Tech Support

Overall, CDW•G was a valuable partner as LTU decided on the Lenovo products, Wachob says. The IT department has purchased from CDW•G for about seven years, but the orders

were all small, such as software or the occasional computer. This was the first huge purchase, and the company came through with great customer service and support, he says.

For example, CDW•G negotiated with Targus to provide students and teachers with competitively priced, durable computer bags with LTU's logo printed on them.

CDW•G account manager Brad Wolken believes the company's good customer service over the years helped CDW•G win the notebook acquisition. “They see our business practices and are well aware of the service and value we bring, and ultimately, that helped us,” he says.

Wachob praises Wolken and Havey, who are always attentive to his needs, regardless of the size of the purchase.

“Brad is knowledgeable, and if he doesn't know something, he gets the CDW•G experts involved. And Todd knows his way around my campus,” Wachob says. “If we need something, we know they will do a good job. We feel comfortable that they will do what they say they will do, and that's what we need. We have great trust in CDW•G.”

Having CDW•G team up with Lenovo influenced Wachob's decision making. Besides offering the lowest price, Wachob considered which vendor is the most stable and has the ability to meet its promises. Together, the two companies have come through on their promises, he says.

CDW•G also gives the university flexibility. Lenovo meets LTU's requirements today, but if the university ever wants to switch vendors, it can turn to CDW•G, which can offer PCs from other vendors. “We aren't locked in to any single vendor,” Wachob says.

Future Plans

Wachob plans to purchase another 700 tablets this year as the university continues its effort to phase out notebook computers. The IT department will run a pilot project that will introduce tablets to students at the College of Architecture and Design, he says.

To ease concerns about the tablet's smaller screen sizes, LTU will purchase large flat-screen monitors for conference rooms and laboratory areas. Students with docking stations can then take advantage of the larger monitors when they need to, he says.

Overall, the notebook computers have improved the learning and teaching process at the university, and the Lenovo computers have been a great addition to the program, Wachob says.

“Students come here, turn the computers on and never turn them off until they're ready to leave. They use them for everything — to do homework and write papers,” he says. “It's also helped us do a better job of teaching. Instructors were apprehensive at first, but as they've used the technology, it's made the university more effective in delivering education to our students.”

Developing Your Own One-to-One Program

For a one-to-one computing program to succeed, colleges and universities need to standardize on computers for faculty and students. Not only does it simplify help-desk support, but it ensures that every user is on the same page technology-wise, says Bill Wachob, IT director at Lawrence Technological University. Because everyone has the same system and can run the same software, there are no compatibility issues.

Wachob offers these tips on creating a one-to-one computer initiative:

- **Asset management is critical.** Typing each computer serial number into a database to keep inventory on which students and instructors have which computers is an arduous task with the potential for error. Instead, consider sticking bar codes on the computers and use bar-code scanners to automate the process. It's faster and more accurate. LTU had Lenovo install bar codes on each computer before shipping them to the university.
- **Provide multiple ways to seek help-desk support.** Allow students to contact help-desk support by phone, a Web interface or simply by walking up to the help desk.
- **Purchase service desk software to manage the help desk.** It allows the IT staff to track help-desk tickets and spot trends. For example, if the same students break their screens more than once, then the IT staff needs to educate them on how to properly care for their computers.
- **Secure the computers.** Install antivirus software and protect e-mail by using antispam and antispyware software or services. LTU's antivirus software, for example, updates notebook computers every two hours or when faculty and students log in to the campus network.

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