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**Don't Touch That Virtual Dial****Some students are ditching their TV's as colleges offer programs online**

By JEFFREY R. YOUNG

These days, students want their MTV on their PC's. Many students living in dormitories at Northwestern University, for instance, do not have a television set, opting instead to use their desktop or laptop computers to see their favorite shows.

Northwestern has set up a system that provides 20 channels of broadcast and cable television over its high-speed campus computer network. The system brings couch potatoes new features, such as the ability to watch several channels at the same time, by running each in a separate window on the computer screen.

"People interested in sports love it because they can watch four different events on four different channels at the same time," says Sheila M. Driscoll, director of business and finance for Northwestern's division of student affairs. "Our students are champions of multitasking."

Other colleges are tuning into the idea as well. Perhaps the most ambitious Net TV project is an effort by a consortium of universities, called CampusEAI, which is hoping to forge a deal with the owners of cable channels to provide cable programs over high-speed computer networks to several campuses at a discount. Case Western Reserve University, the leader of the consortium, hopes to have a pilot version of the service running on its campus sometime in the fall.

Several other institutions, including Dartmouth College, are developing online television systems similar to Northwestern's.

Delivering television programming on computer networks is an example of technology convergence, as colleges try to use their high-speed data networks to deliver multiple communication services. Such moves could save millions of dollars over the long run, officials say, because they allow universities to focus on one network rather than building and maintaining separate systems for cable television, data, telephone, and other services.

On some campuses, students are the ones calling for Internet TV. About 400 students at Case Western signed a petition this spring, organized by the campus's student-run television station, calling on the university to deliver the station's programs over data networks.

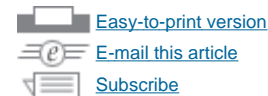
Students want to see television online, says John Landers, a senior who led the petition effort and the general manager of the campus television station, because that "allows them to really do everything on their computer -- to check their e-mail, to watch TV, to talk to their friends, and type a paper all on the same device."

But delivering video online requires high-capacity networks -- otherwise the picture degrades or becomes jerky. That means some colleges would have to make expensive

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network upgrades to be able to offer the service.

What's more, some television networks and cable operators are reluctant to allow online delivery of their content, for fear that it will increase online piracy of their shows.

Deep in the heart of Case Western's main library, behind three sets of double doors, one of which requires a passkey to open, lies a cold, bright server room. Here, racks of computer hardware stand in several rows, each row housing tens of thousands of dollars' worth of equipment that keeps much of the university's network running. This is also where the university ties into nationwide high-speed backbone networks like Internet2's Abilene, which can send data at speeds far greater than that of the commercial Internet.

"This is why this can only be a university effort," says Prashant Chopra, director of research and development for information-technology services at Case Western, taking a reporter on a tour of the room's Web servers, data-storage units, and wiring. "What other kind of entity can set this up?" he adds, noting that few if any companies have the money to invest in the hardware required to deliver cable television across nationwide data networks.

Engineers at the consortium have been working for months to develop the prototype for delivering video on their network, and they say they are finally ready for prime time.

"Now these machines are ready," Mr. Chopra says. "We just need the content."

As a pilot, they wired their system to deliver programming from student-run television stations at colleges in the consortium, as part of a side project called the Open Student Television Network.

Meanwhile, officials from the consortium have been meeting with entertainment executives to persuade them to work directly with the colleges to offer well-known television channels over the network. The executives' two biggest concerns, says Mr. Chopra, are whether the system can maintain picture quality and whether it can protect against piracy.

Mr. Chopra says he hopes to reach agreements with at least a few major television networks in the next few months, though he would not name the companies he is working with while those talks are under way.

### **Concerns About Piracy**

Other campuses have hit roadblocks in similar negotiations.

Maurice D. Ficklin, technical-services director at the University of Arkansas at Pine Bluff, says his campus was the first in the country to create a system that could deliver cable television over Internet wires. Three years ago, when the system was first created, Mr. Ficklin approached the local cable company about offering their content through the system, but faced objections that could not be overcome.

"It's frustrating," he says. "We wanted to do it, our cable company wanted to do it, but at the last moment, the content providers said, 'No, don't do it.'" He says executives who objected worried that the system would foster piracy. Unlike copies made on a VCR, for instance, digital copies of video programs can be easily transferred online through file-trading networks that are popular on college campuses and elsewhere.

But students are less likely to copy television programs online than they are to record them off television with a VCR, argues Mr. Ficklin, because it is difficult for a student to rig his or her computer to copy the online TV signal.

Mr. Ficklin says that he has a version of the television-delivery system up and running to show off to visitors, but that he is not allowed to offer the service to students or others on the campus. "We were the first to do this, and I've been waiting for three and a half years for resolution for us to do this," he says.

Two years ago, Northwestern became perhaps the first college to get an online television system up and running across the campus. The university is working with a company called Video Furnace, whose software offers safeguards against copying.

Wendy Woodward, director of technology-support services at Northwestern, says the university also had difficulty persuading content providers to participate.

The university's dormitories have never been wired for traditional cable television, and students had long complained about the lack of a cable-TV option. University officials decided to go with online distribution because it was cheaper than running new wires.

"We already had the money invested in the computer network," says Ms. Woodward.

### **Few Complaints**

One downside of the setup, however, is that it is not easy to connect the system to a regular television set, so students must have a computer to watch cable programs. But officials say that only a few students have complained, and that most say they prefer to watch on their PC's. She says about 4,000 people a month tune into the online cable system, which is paid for by a student fee.

Kurt McKee, a sophomore at the university, says he doesn't mind not having a television, which he hardly has room for in his dormitory room anyway. He fires up his desktop computer anytime he wants to see his favorite shows. "Some people do bring TV's so they can play Xbox games, but it's not used for watching television programs," he says.

He says he hasn't heard of anyone rigging a computer to copy a television program.

### **Occasional Glitches**

His only complaint: Sometimes the signal freezes up if the network is busy. "We were watching the last-ever episode of *Frasier*, and they were about to reveal something, and all of a sudden everything went black for about 30 seconds," he says.

Dartmouth decided to go with an online system after concluding that replacing its existing cable-TV wiring would be too costly. The college is also using technology from Video Furnace.

"We have a 1970s-era analog [cable] system that is really bad," says Brad Noblet, director of technical services at Dartmouth. "It's just reached the end of its usable life." He says the cost of delivering television on the college's data network is "much, much smaller" than installing an upgraded cable-television system, and will save about 40 percent on operating costs.

The college is also working to deliver at least some TV channels over its wireless computer network. The first channel it is testing is an in-house service that offers educational content, such as language programs.

Officials at Video Furnace say they are on the verge of signing contracts with "a significant number" of colleges and universities to set up online TV services. "We expect to have several additional full-scale deployments by the end of the year," says Howard Weinzimmer, the company's chief executive officer.

Steve Corbató, director of backbone-network infrastructure for Internet2, says he expects more colleges to move toward convergence of cable and telephone systems on

their data network over the next few years.

"I think these are very important events because maintaining separate video and telephone infrastructure have been historically very expensive enterprises," he says.

One unresolved question for Internet2, however, is whether the Abilene research backbone network can be used to deliver commercial cable services. If that were allowed, one campus, such as Case Western, could sell cable to other universities, and pass some of the revenue on to the content channels. But the rules of the Abilene network now forbid commercial use.

Either way, campuses can use their own networks to work with companies to provide content, as Northwestern, Dartmouth, and Case Western do.

Although watching TV, talking on the phone, and typing papers all on the same device might sound futuristic, students find it natural, officials say.

"When you watch how people, particularly younger people, go about their daily lives, the television set isn't the center of focus anymore," says Mr. Noblet, of Dartmouth. "It's their laptop."

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