

What: ACUTA Keynote Speech

When: Monday, July 14, 8:30 a.m.

Who: I lifted the following profile from ACUTA's web page—

The Association of College and University Telecommunications Administrators (ACUTA) is an international non-profit educational association serving nearly 800 colleges and universities. ACUTA also has 120 corporate affiliate members, representing all categories of vendors who serve the educational market, including equipment manufacturers, Regional Bell Operating Companies (RBOCs), long distance carriers, software providers, and consultants.

University members are typically director level or higher, and are responsible for data, video communications, and networks in addition to traditional telephony. New technologies, such as distance learning, present opportunity as well as challenge. As universities increasingly rely on telecommunications to meet these challenges, ACUTA has emerged as a partner in success in today's environment of exponential change.

Good morning. It is a pleasure to speak to the members of ACUTA and a pleasure to welcome those of you who are from out of town to Atlanta.

When people not familiar with the city think of Atlanta, they may imagine moonlight, magnolia, and at times, Mayberry. I discovered this fact while once working on a consulting job in California. I arrived at the client for an important meeting and approached the receptionist to let her know I had arrived. Upon hearing my slow drawl, she looked impressed and inquired, "Is that a British accent I detect?"

When I informed her that "No, I was raised in Georgia," I saw the impression I had made swiftly changing—from Cary Grant to Gomer Pyle.

Accents aside, Atlanta can in no way be considered slow moving.

Technology has fueled Atlanta's trajectory from a small rural city to a bustling modern metropolis. First railroads, then the airport, then interstate highways have helped make Atlanta a center of national and international commerce.

Today, Atlanta is on the threshold of yet another leap into the future. Since 1990, the government, higher education system, and Georgia's corporations have been building a telecommunications infrastructure designed to move Georgia forward. Just recently the American Electronics Association published a report stating that Georgia was second in the nation for high-tech job growth over the last five years—and cited our infrastructure as one reason for our growth.

High-tech job growth is just one benefit Georgia has realized from the addition of telecommunications infrastructure. Our educational institutions have benefitted as well, using the infrastructure to offer high-tech educational advantages to our students.

In fact, the theme you have chosen for your conference, Connecting Education to the Future, closely echoes the strategy we have adopted.

But it is not just Georgia who is moving forward using educational technology. All across America, our educational system is being transformed by technology. Telecommunications professionals like you are helping to virtually reinvent the classroom as we know it.

America is ready for this transformation as evidenced by the following statistics:

1. 1 in 4 homes now own personal computers.
2. 89 percent of teens now use computers at least several times a week. (Newsweek)
3. 92 percent of teens think computers will improve their educational opportunities.
4. Finally, the number of undergraduates heading to college is increasing. In Georgia alone, the number of high school graduates

is expected to increase by about 30,000 over the next five years.

With the combination of students raised on M-TV, Nintendo, and personal computers and the coming influx of more students, change is inevitable. In fact, the question is not, “Will higher education change?” as so many are now asking, but “How much will higher education change?”

There are many who believe change will be so extensive as to render the university as we know it obsolete. Renowned management consultant Peter Drucker said in the March issue of *Forbes* magazine, “Thirty years from now the big university campuses will be relics. Universities won’t survive. It’s as large a change as when we first got the printed book...Higher education is in deep crisis. Already we are beginning to deliver more lectures off campus via satellite or 2-way video at a fraction of the cost. The college won’t survive as a residential institution.”

Perhaps the first to trumpet the death of the university as we know it was Dr. Eli Nome, director of the Columbia Institute for Tele-Information, who said in his landmark article, “Electronics and the Dim Future of the University,” “... while new communications technologies are likely to strengthen research, they will also weaken the traditional major institutions of learning, the universities. Instead of prospering with the new tools, many of the traditional functions of universities will be superseded, their financial base eroded, their technology replaced and their role in intellectual inquiry reduced.”

Although I respect the opinions of both Dr. Nome and Peter Drucker, I disagree with their predictions. In the first place, virtual universities don’t have a football team worth a damn.

In addition, for undergraduates students especially, time spent living on campus or nearby is a learning experience in itself--a rite of passage if you will. A virtual university doesn’t account for intramural sports, student government, student organizations, or even the conviviality found in the campus dining hall.

And, all contribute to the students’ overall growth and learning experience.

Instead of sounding a death knell for the nation's universities, I believe technology, specifically telecommunications technology, will transform the educational experience, enabling students to take a more active role in learning.

As Dr. Michael Hooker, chancellor of the University of North Carolina at Chapel Hill explains in his essay, "The Transformation of Higher Education": "Technology allows us to customize education, to provide options and to allow students to study for as long or as little as they need."

As an example of the benefits of technological changes to higher education, I'd like to point to several programs and activities for undergraduates currently ongoing at Georgia Tech.

First of all, due to the 1996 Olympics, Georgia Tech gained an impressive computer network that provides voice, audio, and computer links to the entire campus. As a result of this high-technetwork, called Futurenet, we have been able to step up the student's learning experience, bringing it into the future. Next fall, to take advantage of Futurenet, we are requiring all freshmen to own their own computers. On a basic level, this will encourage all of our students to e-mail their professors and use their computers for basic computing functions. However, we plan to offer much more.

One harbinger of things to come is Classroom 2000. Currently, still in its infancy, seven classes used Classroom 2000 this past quarter, including classes in software engineering and Calculus.

The focus of Classroom 2000 is on learning, not convenience, and it studies the design and impact of ubiquitous computing in education and the impact technology has in improving education. Integrating audio, video, notes, and the speaker presentation, Classroom 2000 captures the entire classroom experience so that students can access it later.

The way it works is this:

In class, the professor lectures and uses a whiteboard to capture his

notes. Immediately after class, using a Java web browser, the student can access the notes the professor wrote on the whiteboard, and by simply clicking on a word within the outline, the student can then hear a playback of the professor's lecture.

The idea behind Classroom 2000 is that students can spend classtime learning and listening, rather than scribbling notes. Of course, students may decide not to show up in class at all, instead preferring to rely solely on the class notes and playback. That's fine with the Classroom 2000 teachers--the program is designed to help the students learn, not dictate how they do it.

Researchers are currently working on modifications to the program. Future plans include a computer pen segment where the student's notes are transcribed directly to disk and available to that student and others throughout the class via the Internet.

Researchers are also developing a search mechanism where students can type in a word, and all the references to that word from the entire semester will be pulled up via the computer.

Other network advantages on campus include freshmen tutoring sessions conducted over our campus cable channel. Students can view the tutoring sessions over their televisions and either call in with questions or send questions via e-mail.

In addition, many classes utilize Internet chat sessions to study or correspond with the teacher. The campus network has also made registering for classes easier; students now go on-line, rather than standing in line.

In the future, on the undergraduate level, I think we will continue to see educational technology evolving, offering a more customized learning environment to the student. However, in no way do I see a "virtual university" ever replacing the growth experience to be found on a residential campus.

I do expect, however, that we will see tremendous high-tech growth in the programs offered to those returning to campus for further education. According to the national survey, "What the Public Wants from Higher Education, Workforce Implications from a 1995 Survey,":

1. 81 percent of surveyed Americans think that getting additional education is important for them to be successful at their place of employment.
2. 15 percent of surveyed adults have had experience with distance education, and 3/4 of those surveyed think more courses should be developed using distance methods.
3. The report then ends with this conclusion, “Colleges and universities must change how they do business to meet the demand for lifelong learning.”

Just this past winter at our commencement ceremony, I met a man who had obtained a master’s degree in health physics from Georgia Tech. After shaking my hand, he explained that he was enjoying obtaining his degree during his very first visit to the campus.

Last year more than 17,000 working professionals participated in more than 900 Georgia Tech continuing education and distance learning courses. Many, like that young man, did not once set foot on the Georgia Tech campus. Technologies used to provide those classes included satellite, Internet, microwave, and video conferencing.

One particular example I’d like to point out occurred in a continuing education class delivered to the employees at Amteva Technologies, a software development company in Richmond, Virginia. That course was conducted over the Internet, where students could hear the teacher’s voice and then ask questions via a chatroom. After the course was complete, we received the following quote from Amteva Manager of Documentation and Corporate Communications Patricia Locke

“I knew the classes would be good because we've taken classes at Georgia Tech before, but I didn't think they would be as good as being in the classroom. I thought we'd miss out on some of the information you gain from the questions the other students ask. But, the way the classes are designed you get all that. What you don't get is the expense of traveling to take a class.”

I think her quote is fairly typical of the thousands of companies throughout the United States who are benefitting from long-distance education. Distance education and continuing education are definitely areas where universities and colleges can make a difference. They are also areas where we will see intense competition as colleges and universities as well as private industry compete to gain a stronghold in this booming market. In 1995 alone, training expenditures totaled about \$52 billion—a 15 percent increase from 1990.

Another advantage technology brings to higher education is that it provides the capability for outreach. Throughout Georgia, the Georgia Statewide Academic and Medical System (or GSAMS for those of us who must have an acronym for everything) provides two-way video instruction between instructors and distance learners. There are 340 distance learning sites throughout the state, three of which are based at Georgia Tech. One of the ways we are utilizing GSAMS is to reach out to Georgia's high schools. For example, we are offering a Calculus class to the students at Norcross High School. We also use GSAMS to provide courses to Tech students that are not available at Georgia Tech, but are offered at other universities in Georgia.

Because of, rather than in spite of technology, I think we all have an exciting future ahead of us. From what I've seen of the current research, I believe we will see further convergence of technologies, faster technologies, more virtual reality, better quality graphics, and greater linkages between home and school or home and office. One research project here at Georgia Tech, called Domisilica, is investigating the possibility of linking the home to wherever you happen to be during the day. One exciting part of the research involves the Cyberfridge that they're also calling "the fridge to the future." Using Cyberfridge, students or workers can send notes or memos to themselves at home that will show up on the home refrigerator door. Likewise teachers and professors can post grades to the student's refrigerators or post reminder notices.

The innovations and strides that we make as we move towards this future will be the result of people like you who are working to connect education to the future. It will be because of people like you that colleges and universities do move forward and are able to

take advantage of the new technologies.

Consider the words of Dr. Alan Chute of Lucent Technologies, Bell Labs Innovations who said, “We know that technology is not the solution to every problem confronting education and training, but we believe that no permanent solutions will be found without considering the impact of technology.”

The future and technology are inextricably linked and before I go, I would like to leave you with one last quote. The quote comes not from an industry expert, but from someone much more important to the future of the university: a student. Jennifer DiGregorio is the daughter of Joe DiGregorio, Georgia Tech’s vice provost, distance learning, continuing education, and outreach. Once when they were discussing the advent of new technologies, Jennifer, a product of the Nintendo Age, said, “Dad, we don’t just accept new technologies, we expect it.”

Future success for the modern university can be boiled down to a relatively simple concept. To excel in the new higher education paradigm, America’s colleges and universities must meet—and surpass those expectations.

Thank you.