TELECOMMUNICATIONS ADVISORY COMMITTEE MEETING—APRIL 26, 2002

COMMITTEE MEMBERS IN ATTENDANCE

Jeremy Leger	Michael Scott	Bill Edgerton
Estella Crider	David Mills	Tommy Sharpe
Bill Martín	Kacey Claiborne	
Billy Bob Bates	Edwin T. Cross	
Skip Knowles	Tony Phelps	
Jeff Markowitz	Glenn C. Wintrich	

CCCCD MEMBERS IN ATTENDANCE

Janet Jaworski	Tom Mobley	David Hoyt
Bob Luckock	Jeff Fant	Bryan Humphreys
Ann Beheler	John Perrine	
Bob Wright	Pete Brierley	

The meeting began at 8 a.m. Dean Ann Beheler welcomed all those present, emphasizing that the Engineering Technology (ET) Division is driven by industry. We need to respond to industry needs. She asked that everyone introduce themselves, telling which company they represent. Ann then turned the meeting over to Pete Brierley, ET Telecommunications (Tcom) Coordinator.

Pete directed everyone's attention to the course description handouts, which were distributed. These handouts provide information regarding the certificates and degrees our program includes. Our current program is based on previous Tcom Advisory group members' suggestions. We seek the input of those present. Customer service specialization is one of the important roles. Pete went on to briefly discuss the different courses offered. Technology changes over time. We need to know if we should offer more specialization classes. We want to start communicating. Pete turned the floor over to Tom Mobley.

Tom asked, with a smile, that industry stop promoting their layoffs! Instead, start promoting job fairs. He went on to say that it is difficult to get students interested in Tcom classes if there aren't any jobs available. *We* know things will improve, but the students don't always see that. ET wants to prime the pipeline. With the use of National Science Foundation (NSF) grant money, we offer Tech Camp involvement to reach out to middle school age children. We teach camp students to use a compass, radio, and a direction finding antenna. It's fun to see the young students blossom. Those who get an FCC license are given a radio. We've used radio to talk to amateur satellite. This year ET will have the advanced tech camp as well. They will be involved in projects and information they can actually use. Advanced camp will expand on wireless using digital signal processing. We'll also have them do encryption. We hope to get the young students interested in the security field. The main purpose is to show students they can enjoy the technical field. The pipeline's getting primed right now. We could use help from industry to send us employees whose experience could benefit our program.

Pete then introduced Bob Wright to discuss the newly created convergence lab. Bob referred to his handout, which was provided to those present, as he spoke, explaining the use of a virtual "office" setting. We have received some money from the TIF grant to fund the lab. We're very excited about our convergence lab. Pete interjected that we need the technical people involved with our advisory group more than the HR people. While HR people are a good group, the technical people are the ones who know what our students need to be prepared to go out into the work force. Additionally, CCCCD has a Cisco program. We're a regional center for CCNP. We're on a national level, with students from all over the world attending training at our campus. Pete asked for feedback from the group on other things for the future for which to prepare. Voice over IP? Optics? Ann added that we'd like to know where the individual industries are going.

It was suggested that voice over IP presents a more unified messaging. Pete asked how widespread is that. One step further—service providers want it to be conference multicast capability. Wait to ensure quality service issues, so a call won't be dropped. The comment was made there there's a shortage of students who understand LDP skill sets; these are needed in the mail system, exchange system, anything in LAN. Additionally, voice over IP was discussed. SIP technology at WCOM system is favorable as approved to industry. Does the convergence lab have anything on DWDN coming down? Multi LAN tied to optics?

Need to concentrate on ITU components. Need to ensure the students understand so they can do an entire sweep of optics—variety.

DOIP **VCIP** **unified messaging** **LAN** **convergence LDAP** **VOIP**

Fit Bet Centrex & Enterprise **Optics DWDM** **Conference multi casting**

Quality of service **MPLS** **ITU** **Deployment (Apps, cost, market, size)**

MMDS **3rd generation in wired content delivery Networking**

Broadcast video **Business Plan 1) communication skills 2) writing skills**

Applications-justification **Supply chain management** **Vertical markets**

2-year management-Technical Route **Lab test simulation**

Course in traffic, VPN, IP, Eng. **Trouble shooting** **Network management**

Pete inquired if there is any new technology with the fiber itself? Yes, it is always

evolving. Having to replace? Yes, one thing to make sure fiber can handle DWDM. Look at fiber specifications, etc. important to know different components of fiber.

Bob Wright mentioned that application is a business solution. How will something benefit the business. It was mentioned that one has to know when to move, when's the right solution for the problem. What can we do more of to spread business? We need to look at cost, visionary approach of where it's going into business and home, co-ax, wireless, etc. Cable companies stopped doing more in the homes because it's not cost effective. Need to have fiber in the neighborhoods. Bluetooth, for example, is a device in the home to connect the mouse with the keyboard. A comment was made that wireless solves the problem for business but not at home because of the wires. There's cost involved.

Further comment was made that technical writing and speaking skills are something students need to be taught. These skills are important in industry. Bob Wright stated that he assigns his students the task of preparing an Executive Summary paper. The English classes need to provide more technical writing skills. An executive does not want to listen fifteen minutes for a two-minute answer.

Maybe the students could be graded on design presentation. In the real world they have to make presentations, have to understand who is the target audience. Engineers who are promoted are those who are articulate and who are able to produce a business plan. It was recommended that students have a session in which they present and sell to a business.

Pete added that Cisco has a case study class in their program. It's a consulting group that prepares a plan to demonstrate to a customer. Project management folks have these skills and can use them to go to another industry. These will help an individual in a downturn of the industry such as we are currently experiencing. A vast majority of industries look for word convergence or technical language on a resume.

Bob Wright added that we need a sniffer in the convergence lab. If anyone in the group has one they are willing to donate, we'll take it! The question was posed as to what we use to load traffic with data? Bob responded that we don't have a traffic simulator. We need to get one of those as well. Pete added that we're still putting the convergence lab together. We need to obtain several items but we don't have the budget to get it all; we're still working on it.

It was mentioned that Alcatel rents lots of test equipment. Because of the way the industry goes and the high cost of purchasing, renting has proven to be a viable option. Hands-on training is great but we should be cautious of limiting ourselves. Need to expand the book training. Pete used this opportunity to move onto the next topic of discussion, books for students. Textbooks are difficult in this field because the technology moves so quickly. Some individuals have written material for their industry. We would like to interface with these individuals to use that material. Also, training is an

issue for faculty because they don't always have the opportunity to get the latest training. Some things are basic and historic.

The comment was made that industry needs to be able to get replacements for the aging workforce. Need to teach basics for students. Also, need to reinforce IP; include IP and how it fits into the scheme of things. Pete inquired of the group where we should look for version 6. He was told there isn't anything more than version 6 right now.

Further comments were made on what the students need to know. Troubleshooting was brought up as a critical factor. Students need to be able to know how to solve problems. Within the next three months EDS will be upgrading their LAN cards, etc. The question was also posed whether or not the students have the option of taking a technical sales course. Bob Wright stated that his students do within his class, but there is no technical sales course within the college curriculum. It appears there is a severe shortage of technical sales personnel. Industry has seen major changes of those who have left companies and gone on to something else.

Because of downsizing, and the union being based on seniority, sixty percent of the workforce is getting ready to retire soon. Most of the technicians who come in fresh don't have the ability to go into a manufacturing manual and apply to troubleshooting.

Janet Jaworski made an important point. Part of the problem is that students don't have understanding of what goes on in industry. To know what's going on, she's developed the opportunity to job shadow so students can see what they'll need in the work world, e.g. writing skills, working together skills, etc. They need to <u>see</u> it, experience it. She'd like to see us working together with industry more to help students.

Worldcom recently had job shadowing. They talked about resumes, showed students how things worked, applied what they learn in school to the work place. A lot of discussion has been made of the hard and soft skills. Perhaps a sixteen week course about work place experience could be provided for students. Prepare a real world program when industry hands student a plan to work on, solve the problem of the "company" to have customer operations perspective, sales, etc. This would allow the student to be exposed to it all. Tom Mobley commented that each program has co-op classes. It's been tough lately, because of the current state of the industry, to place students in co-op classes but CCCCD does have a system in place.

Pete mentioned that we have a good Introduction to Telecommunications course to give students an idea of what it's all about. With that, Pete asked the group to schedule the next meeting so as to adjourn. The group agreed on Wednesday, September 18, 2002 at 8:00 a.m. at the Preston Ridge Campus. Details will be forthcoming.

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Glenn C. Wintrich
Advisory Committee Chairperson