

FINAL REPORT

**TELECOMMUNICATIONS OVERSIGHT
STUDY COMMITTEE**

**Presented to the Legislative Council
and the Iowa General Assembly
January 1991**

Prepared by the Legislative Service Bureau

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AUTHORIZATION AND APPOINTMENT

The Legislative Council established the Telecommunications Oversight Interim Study Committee during the 1990 legislative interim, and directed it to monitor the implementation of the state communications network.

Members of the Committee were:

Senator Richard Varn, Co-chairperson
Representative Kay Chapman, Co-chairperson
Senator Mark Hagerla
Senator Emil Husak
Representative Emil Pavich
Representative Bill Royer

BACKGROUND INFORMATION AND COMMITTEE PROCEEDINGS

The Legislative Council approved two meeting days for the Committee, and meetings were held on August 14 and December 19, 1990. The first meeting was originally scheduled to occur immediately after the bid award on the Request for Proposal (RFP) on the State Telecommunications Network. However, on August 6, 1990, the Department of General Services rejected all bids submitted on the RFP and released a revised RFP on October 13, 1990, with a due date for proposals of November 21, 1990. Committee staff provided the members with updates on meetings conducted by the Department of General Services regarding progress on the revised RFP during the time which elapsed between the two Committee meetings. The final meeting date was scheduled to take place after the estimated date of the award of the bid.

August 14, 1990, Meeting

Summaries of testimony presented at the August 14, 1990, Committee meeting are as follows:

Ms. Linda Schatz, Narrowcast Advisory Board, Iowa Public Television, a reviewed of the efforts of the Narrowcast Advisory Board in developing standards for classrooms, equipment, technical staff, job descriptions, and other administrative issues important for the proposed telecommunications system. She stated that the Narrowcast Committee and the Department of General Services have been seeking ways to downsize the proposed system to reduce costs. She also said that provision of classroom equipment is not part of the state project, but will be part of the local budget development process.

Mr. Jack Walters, Director of the Department of General Services, and Mr. Tony Crandell, Network Project Manager, described the history and the highlights of the RFP for which bids were recently rejected. Mr. Walters distributed a copy of a Memorandum which contained several suggestions for changes to the RFP, and delineated the reasoning behind each of the proposed changes. Mr. Walters informed the Committee that, while the actual classroom hookups are not a part of the state project, there is an 80-20 state match for institutions interested in completing hookups to their institutions. Mr. Crandell noted some of the costs that are assumed in the downsizing of the network, such as accommodation of differing technologies and systems and the cost of ongoing maintenance because of the elimination of the 20-year system guarantee. Mr. Walters and Mr. Crandell informed the Committee that some of the individuals, who would have been directly connected to the fiber optic network, will now use local connections to receive data and audio transmissions over the network, although new requests for video capability over the network would cause problems. They also noted that the proposed revised bid would maximize use of existing capacity in the state, with additional capacity going to limited geographic areas that are not currently served by any fiber optic network.

Dr. Emmet Vaughan, from the University of Iowa, provided a copy of the State Board of Regents' strategic plan for off-campus credit programming, discussed the themes and goals of the plan, and discussed how the system will allow the Regents to provide educational advantages to both low and high population areas of the state. He also described the efforts on the part of the Regents' institutions to engage in a cooperative discourse with other education institutions relating to the development of educational offerings.

Dr. Patricia Swan, from Iowa State University, discussed the variety of potential uses for the proposed telecommunications system, including offering master's degree programs to a larger geographical area, provision of direct access to educators by the College of Education, and cooperation with technology transfers. She emphasized the need for two-way visual and audio connection in order to ensure quality and expressed the belief that educators will need training in order to effectively communicate through the new medium.

Dr. Robert Hardman and Mr. Glen Hansen, University of Northern Iowa (UNI), discussed the University's support for the proposed new system, described UNI's efforts to prepare for the initiation of the system, and indicated UNI's proposed uses of the system. Dr. Hardman expressed concerns over the current delays in system implementation and potential costs of the system to the users. Dr. Hardman indicated that, not including costs for lighting and acoustical and other elements necessary for quality video production, the equipment costs per classroom for an instruction video hookup are about \$25,000. It was also noted during Dr. Hardman's presentation that, if the other costs are added in, the total cost for a classroom instruction video hookup is about \$80,000.

Mr. John Hartung, Mr. Don Moon, and Mr. Paul Bowers, Association of Independent Colleges and Universities described the efforts by many of the private postsecondary institutions to prepare for and utilize the proposed new telecommunications system. Mr. Hartung expressed the need to include the independent colleges and universities directly in the fiber optic network, since they otherwise cannot originate communications on the system. He also described several current and potential uses for a fiber optic system, such as the Ball State "Campus of the Future" and possible partnerships with private industry to familiarize students with workplace technology. Mr. Bowers, from Buena Vista College, reviewed a number of accomplishments by independent colleges and universities in the area of telecommunications and noted a number of cooperative efforts currently under way in this area in which private institutions and community colleges have been working together. Mr. Moon, Director of Telecommunications at Drake University, described Drake's history of off-campus educational programming and uses of telecommunications in distance learning. Mr. Moon also noted that there are 3,000 students currently enrolled in telecourses offered through Iowa Public Television.

Mr. Calvin Hultman, Mr. Joseph Borgen, and Mr. Michael Morrison, Community College Presidents Association discussed the human resource and long-term needs related to implementation use of a telecommunications system by Iowa's education system and the roles that the community colleges can play to assist with meeting those needs. Mr. Borgen, from Des Moines Area Community College, discussed the roles and duties of a teacher in using a telecommunications system and the need for the identification of master teachers to train others in appropriate and effective use of the telecommunications media. Mr. Morrison emphasized the need for a support mechanism for colleges and schools to assist in training personnel, making decisions as to physical aspects of system implementation, and the development of strategies as to the most effective use of the media in the instructional setting and stressed that the development of a telecommunications system involves more than installing hardware.

Ms. Gail Sullivan, Department of Education Legislative Liaison, and Dr. Robert Hardman, from the University of Northern Iowa, described the Department's efforts

to ensure that teachers are adequately prepared for distance learning and the cooperative three-phase program developed in conjunction with the University of Northern Iowa and Kirkwood College to help achieve those goals. She described the current Departmental rules regarding use of telecommunications and the Department's encouragement of the use of funding from Phase III of the state Excellence in Education program to assist in the transition needed to work with the new system. Dr. Hardman described the workshops that have been developed as part of a three-phase program designed to give teachers hands-on experience with the new equipment and to teach effective strategies for use of the system.

December 19, 1990, Meeting

At its second and last meeting, the Committee heard presentations from various members of the education community, the companies which bid on the Request for Proposal for the state network, and the Department of General Services. Summaries of the testimony provided are as follows:

Dr. Robert Anderson, Vice Provost for Extension Services at Iowa State University (ISU), described his experiences with televised instruction and instructional media, the goals which ISU hopes to accomplish in using the new network, and the benefits of establishing a state fiber optic backbone network to the state and citizens of Iowa. Dr. Anderson described the current distance learning capabilities available at ISU, the drawbacks in the current systems, and the techniques and applications needed for useful distance learning programs in various subject matter areas.

Dr. Emmett Vaughan, Dean of Continuing Education, and Dr. Von Pitman, Dean of Instructional Support, University of Iowa, described the current investments made by the University in satellite and microwave technology used in the current distance learning programs and compared the benefits of those systems to the proposed state fiber optic network. They informed the Committee that, when the original fiber optic proposal was made two years ago, the Regents indefinitely postponed previous construction plans for their own distance learning system, because of the potential benefits of a comprehensive statewide system and the costs and possible segmentation of a Regents-sponsored system. Dr. Vaughan noted that the University of Iowa already has 45 miles of fiber cable to Muscatine, where the system was connected through a community college to Cedar Rapids and Davenport, and has rented space for microwave transmissions on towers in various communities. He also noted the Federal Communications Commission licensing and future growth potential problems inherent in a microwave transmission system which are not encountered in a fiber optic system.

Dr. John Hartung, Association of Independent Colleges and Universities Representative, Dr. Richard Hirsh, Drake University Vice Provost, and Mr. Don Moon, Drake University Director of Telecommunications, discussed the potential

role of the independent colleges and universities in a statewide fiber optic system, and some of the current and past distance learning opportunities available through the independent college and university system. Dr. Hirsh noted that a comprehensive statewide system will produce savings in the area of expenditures for faculty travel and, at the same time, permit quality instruction to be transmitted to broad areas of the state. Dr. Hartung noted that a statewide system will assist with problems with faculty shortages and accommodate the higher teaching load problems associated with instruction at private postsecondary institutions. Mr. Moon noted that Drake University used to provide an enrichment program for students in grades kindergarten through twelve, through the Department of Human Services, which had to be discontinued due to transportation problems, but that a statewide system would permit enrichment courses to be provided on a regular basis.

Ms. Gail Sullivan, Department of Education Legislative Liaison, described personal experiences with locating resources to assist in classroom teaching and discussed the assistance that a statewide telecommunications network can provide in an instructional setting. She noted some of the problems faced by today's schools, including teacher shortages, increased instructional standards, declining enrollment, and increased professional development demands due to technological demands, and the resultant financial strain upon districts. She added that the state will not be able to achieve the State Board of Education's new education goals or remain competitive in a world education market without the creation of a statewide network. She noted also that the usefulness and usage of the proposed network is potentially unlimited.

Ms. Shirley George, State Librarian, described how the creation of a statewide telecommunications network will enhance the current and potential offerings of the state's library system. She noted that the network could be used to connect the remainder of the state's libraries to the Iowa Computer Assisted Network to permit greater access to the state's book collections; to connect other libraries to the Iowa Library FAX Network to provide immediate, electronic delivery of periodical articles; to link on-line catalogs of the major universities and national networks to community libraries; to provide enhanced adult continuing education opportunities; and to provide video-conferencing facilities for public and private meetings.

Dr. Albert Wood, the Administrator of Area Education Agency III, described how a statewide telecommunications network can impact on the services provided to students and school districts by area education agencies. He noted that Area Education Agency III already is participating in a distance learning regional system and said that benefits that already have been realized in increased communication ability and reduced travel time and expense. Dr. Wood also distributed written information on existing distance learning systems, current accomplishments, potential future offerings, and current unmet education needs that could be addressed through the network.

Mr. John Blong, Chancellor of Eastern Iowa Community College, described some of the distance learning activities in which Eastern Iowa Community College and other community colleges are currently participating in conjunction with other higher education institutions. He noted that Eastern Iowa Community College's system is currently at capacity and will have to be expanded if a statewide network is not constructed. He noted that distance learning permits colleges to share expertise, build on individual strengths, and share resources by providing the ability to hire specialized faculty members, place them at one institution, and spread the cost and resources over to several institutions. Chancellor Blong described the development and growth of the current microwave system and compared that system to the proposed fiber optic system.

Dr. Robert Hardman, University of Northern Iowa, discussed the impact that the proposed system has had on the Regents' universities planning, and specifically on the University of Northern Iowa's on-campus distance learning initiatives. He described the cable network that the University has established between the campus and the University laboratory school, the workshops that have been conducted at the University of Northern Iowa to assist in the Department of Education's distance learning staff development activities, and potential origination activities that he foresees for the proposed system.

Mr. Kent Jerome, Iowa Telephone Association, Mr. Robert Sherlock, Mr. Robert Haines, and Mr. William Shoemaker from several Iowa telephone companies discussed the position of many of Iowa telephone service providers with respect to the concept of a statewide telecommunications system, presented a proposal for delivery of a statewide compressed video system using existing copper media, and described some of the technological advances which have made development of this proposal and cost analysis possible. It was noted by one of the presenters that the company he represents did not bid on the current Request for Proposal, because they are not a construction company and the current proposal called for the burying and laying of new fiber cable, not use of existing equipment. The presenters discussed the potential growth opportunities of their proposal as compared with the requirements of the RFP. They also discussed whether the telephone companies could or are interested in providing services from end points of a statewide fiber backbone system to users of that system, if it were to be constructed. A map of existing buried fiber, currently in use by several of the companies, was distributed to members of the Committee.

Mr. James Pack, and Mr. Kevin Moersch, from Peter Kiewit Network Technologies, the company selected by the Department of General Services through the RFP process for award of the network construction contract, distributed written materials and presented testimony which described the use and benefits of a dark fiber, as opposed to a copper, telecommunications system. They noted that the educational community selected fiber, as opposed to copper, for transmission of

educational video and data, because the enhanced capacity of the medium permits transmission of information with minimal distortion of color, sound, and motion, which is essential for learning in many subject matter areas. Mr. Pack noted that the standards chosen in the RFP are consistent with standards for broadcast quality video, and are essential to a distance learning system. He also noted that only 1.7 percent of the network cost is made up of the cost of video codex equipment, so that if technology changes, Iowa can upgrade its system at little additional cost to the state. It was also stated that the Peter Kiewit company proposal is for a new system, at a fixed price bid, and that they intend to use Iowa-based labor, services, and subcontractors wherever possible.

Mr. Jack Walters, Director of the Department of General Services, described the Department's activities during the bid process, and the potential cost of utilizing the services of the lowest compliant bidder on the project. He described the proposed schedule of events for the contract process, should the Legislative Council and the Department of Management certify sufficient funds to go ahead with the project, and noted that the federal government is interested in providing funds for the project. Mr. Tony Crandall, Project Manager, described the potential benefits to all potential users of the network. Mr. Don Deeds, from Spectra Associates, the Department's consultant on the project, described possible costs to users at the end points of the system to develop linkages to the system.

COMMITTEE RECOMMENDATIONS

At the conclusion of the meeting the Committee unanimously adopted the following resolution as a Committee resolution to the Legislative Council:

TELECOMMUNICATIONS OVERSIGHT STUDY COMMITTEE RESOLUTION

The Committee endorses the need for an educational telecommunications network for Iowa. We believe the final decisions regarding the specifics of the proposed telecommunications network and the financing of the network lie with the General Assembly and the Governor. If legislative changes are necessary to respond to cost concerns or technology concerns, we are confident that state government will react appropriately.

We therefore encourage the Department of General Services, the Narrowcast Advisory Committee, Iowa Public Television, and the Legislative Council, to continue to negotiate on the proposed contract. We further recommend that the appropriate legislative committees review the bid as awarded, the needs of the educational community, the costs and cost savings of the network, and the impact on delivery of telecommunications services in Iowa.



We believe a statewide comprehensive network is needed and is desirable as compared to allowing each educational entity to build its own network. We also believe that the need for educational telecommunications will grow, and expansion capability and the cost of expansion should be carefully considered by the General Assembly and the Governor.

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