the amount of revenues that could be generated in the area even if combined with support could not recover the costs of service. The FCC should adopt a voluntary bidding process to identify the carriers willing to serve such an area at the lowest cost per line.[27] The carrier submitting the lowest bid would be declared the eligible carrier for the provision of both interstate and intrastate service and would receive the universal service support targeted to that area. Funding would be provided from the high cost support mechanism.

§ 214(e)(4) of the Act establishes the circumstances under which carriers may be allowed to relinquish their designation as an eligible telecommunications carrier. If a carrier is permitted to relinquish that status, the carrier should also be permitted to relinquish any obligations it may have at either the state or federal level as a carrier of last resort.

G. Principles for State Universal Service Mechanisms.

§254(b)(5) requires that specific, predictable and sufficient federal and state universal service support mechanisms to preserve and advance universal service be established. The universal service mechanism described above for high cost, rural, insular and unserved areas recovers the interstate portion of the loop costs of serving those particular areas. Therefore, the states should be encouraged to permit exchange carriers to rebalance intrastate rates to assist in the removal of implicit support and to establish separate universal service support mechanisms within their borders. State development of compatible mechanisms will be required to achieve affordability of the customer's total service in high cost areas.

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[27]If a bidding process is not adopted, regulators should be required to consider only contiguous carriers in selecting a carrier to serve the unserved area.

State mechanisms should be based on the same concepts which underlie the interstate support mechanism to provide consistency, minimize customer confusion and ensure that the rates for universal service are just, reasonable and affordable. Those concepts are as follows:

1) An affordability benchmark should be established to ensure that rates are not only affordable, but also reasonably comparable.[28]

2) Smaller geographic areas should be established for non rural telephone companies to target high cost areas.

3) High cost funding should be provided for costs above the affordability benchmark.

4) Support should be explicit. Current implicit support should be removed from rates on a revenue neutral basis.

5) All telecommunications carriers operating within the state should contribute to the funding mechanisms.

6) Contributions should be through surcharges based on retail revenues.

IV. SUPPORT FOR LOW INCOME CUSTOMERS.

Exchange carriers, as part of their commitment to universal service, have already implemented many different programs designed to help current customers remain connected to the public switched network and to connect new customers. The record in CC Docket No. 95-115 clearly demonstrates that exchange carriers and the states have already implemented programs to address the unique subscribership issues within a state.[29] For example, an informal USTA poll indicated that out of 572 responses received,

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[28]The affordability benchmark could be created to recognize that calling scope differences between rural and urban areas have an impact on the level of expenditures customers would consider to be affordable.

[29]Amendment of the Commission's Rules and Policies to Increase Subscribership and Usage of the Public Switched Network, CC Docket No. 95-115, Notice of Proposed Rulemaking, released July 20, 1995.

544 exchange carriers currently offer a form of toll blocking or toll restriction.[30] The FCC should carefully consider the usefulness and effectiveness of existing programs offered by exchange carriers, given the competitive environment, before mandating any new requirements as proposed in the Notice. Many of the proposals would be prohibitively costly to implement and maintain and could increase the amount of universal service support required to maintain affordable rates. Any new requirements must be applicable to any entity seeking to provide local telephone service.

A. The Core Set of Services Proposed by USTA Will Meet the Needs of Low Income Customers.

The core set of services for the provision of universal service will meet the local service needs of low income customers. For example, USTA's definition includes access to directory assistance which would enable low income customers to obtain information as needed. Most exchange carriers already provide free access to the telephone company even in measured service areas. As noted above, the vast majority of exchange carriers already offer some form of toll blocking or toll restriction.[31] The record in CC Docket No. 95-115 does not indicate whether any competitors voluntarily offer toll blocking. Finally, many exchange carriers already offer reduced service deposits. Some exchange carriers connect local service, with toll blocking in place, for those customers who cannot afford a security deposit.[32] Current

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[30]These carriers range in size from BellSouth with over 19 million access lines to Sodtown Telephone Company with only 83 access lines.

[31]Toll blocking or restriction services typically do not differentiate between interstate and intrastate calls. In addition, many exchange carrier billing systems do not differentiate charges for interstate and intrastate toll calling. The costs and administrative burdens associated with jurisdictionally identifiable call blocking would be enormous and would be prohibitive for small telephone companies. In no case should the FCC require toll blocking for interstate calling only.

[32]Deposits are usually required when a company cannot establish creditworthiness, credit history is problematic or the customer had telephone service disconnected and left the network with

exchange carrier practices, combined with the core definition for universal service recommended by USTA will continue to serve the needs of low income customers. No new requirements should be mandated for exchange carriers.

B. Eligibility for Low Income Assistance.

As the Act provides in § 254(j), the current Lifeline Assistance program should be continued in its present form for exchange carriers and their customers. However, the program must be expanded to include other eligible carriers and their customers. The amount of the credit received by other eligible carriers should equal the amount of their interstate EUCL charge. The Link Up program should also be continued as a state program. States should require that all eligible carriers offer a discount on installation charges. The amount of the discount should be determined by the states .

V. ADMINISTRATION OF UNIVERSAL SERVICE SUPPORT MECHANISMS..

The Act requires that the funding mechanisms for universal service support be equitable and nondiscriminatory. They must also be competitively, technically and structurally neutral, stable over the long term and administered in a relatively efficient manner. Therefore, all providers of telecommunications services, both facilities-based and resellers, should be required to contribute to the various support mechanisms. This would include, at a minimum, exchange carriers, interexchange carriers, competitive access providers, competitive local exchange carriers, commercial mobile radio service providers,

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an unpaid balance. Exchange carriers generally work with customers so that outstanding balances can be paid in installments. In many cases, regulations prevent exchange carriers from employing methods used by many companies to protect themselves, such as late payment charges. The FCC should not interfere with sound business practices which allow an exchange carrier to protect its general body of ratepayers from the debts others have incurred or interfere with individual exchange carrier efforts to handle such problems and should allow exchange carriers to utilize the same means available to other companies.

microwave/satellite-based service providers (when their facilities are used to provide telecommunications services), video dial tone providers and cable television providers (when their facilities are used to provide telecommunications services), and providers of the transmission components of information services. A broad funding base recognizes the truly public benefit of universal service and eliminates the possibility that non-contributors could gain a competitive advantage over contributors. The TRS model provides a good example of the advantages of a broad funding base.

Funding should be based on annual interstate telecommunications revenues associated with retail (i.e., end user) transactions. Transactions involving services or sales provided as an input for the provision of other telecommunications related services should not be included (e.g. access services sold to other carriers for the provision of toll services, services provided to other carriers for the provision of resale services and equipment sales to telecommunications service providers offering common carrier type services). Other revenues from transactions involving the information component of information services, the content component for cable television services, video dial tone services not used in the provision of telecommunications services and regulatory surcharges (e.g., E911 and TRS) and taxes could be excluded if discretely identifiable.

The use of interstate retail transactions avoids the double counting that would occur if wholesale transactions were to be utilized. Using retail transactions also minimizes the economic disincentive which could be caused by assessing input services. If wholesale transactions were included, an incentive would exist to avoid the wholesale transaction. Avoiding wholesale transactions may incent uneconomic decisions. For example, a retail service provider could avoid the wholesale transaction by self-provisioning the input service. Utilizing retail revenues for the funding base is competitively neutral, provides long term stability as well as technological and structural neutrality.

Collection of the funds should be through a fixed surcharge applied to all retail transactions included in the funding base. A fixed surcharge based on retail revenues is competitively neutral because the same percentage would be applied by all telecommunications carriers included in the funding base. It would also promote efficient purchasing decisions because the surcharge percentage would be applied regardless of the carrier selected. The surcharge should appear as a fixed percentage on the retail customer's bill. The surcharge would recover all the universal service support mechanisms.

Administration of the federal fund should not be left to the individual states, except as proposed above for the provision of special services to schools and libraries.[33]

VI. CONCLUSION.

The Joint Board should recommend and the FCC should adopt the proposals contained herein to implement the portions of the Act dealing with the provision of universal service.

Respectfully submitted,

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[33]NECA could administer the universal service support funds under a structure which would not interfere with its responsibilities to prepare and defend the tariff for pooling exchange carriers.

USTA ATTACHMENT ONE (1)

The following examples are illustrative of the local exchange carrier industry's past, present, and future commitment to education:

ALABAMA

Brindlee Mountain Telephone; Arab, AL: The Brindlee Mountain Telephone Company provides educational support to the schools within its service area in a number of ways. Through its partnership with MindSpring Enterprises, BMTC furnishes a free Internet access account to each of the 8 schools in its service area. BMTC and MindSpring personnel conduct classes in the schools at no charge to demonstrate Internet use for both teachers and students. BMTC personnel also serve as resource persons for teachers to call on during special lessons.

BMTC also currently plans to provide free Voice Mail announcement lines to four local schools and the administrative central office. Plans are in place to expand the program into the other four schools should the project prove successful.

Professional Development, AL: Two schools for teachers at Auburn University in Alabama developed a program for helping teachers stay abreast of changing technology and furnishing them with tutors to help them write and implement technology-based lesson plans for students. BellSouth is funding this project in the amount of $150,000 over three years.

School Bus Phones, AL: Over 600 busses in four school districts of Alabama enjoy the security of cellular phone service at the expense of BellSouth Cellular. Beginning in 1994, the company began a four year program to equip the busses with cellular phones and antennae. Priority is given to busses for disabled and special education students and busses traveling through high crime or remote rural areas. The phones are preprogrammed for origination and memory dialing, making emergency numbers a simple one or two digit call. Beyond free equipment, BellSouth is providing free monthly service. Total value through 1997 is $568,000.

ALASKA

Matanuska Telephone Association, Inc.; Palmer, AK: In 1992, the Alaska Public Utilities Commission approved MTA's request for a five year pilot program during which MTA provides a DS3-switched distance learning network, including transmission and system management, at no charge to the Matanuska Susitna Borough School District. The school district has purchased classroom equipment and pays a monthly fee of $200 for maintenance of the fiber and associated network components. MTA's annual operating costs of $125,000 cannot be included in its rate making revenue requirement

ARIZONA

Voice Messaging in School, AZ: Through US West, three elementary schools in Phoenix are testing voice messaging service as a communication channel between the school and parents. Teachers are able to send personalized messages to individual parents.

ARKANSAS

Arkansas ATM Trial, AR: In Arkansas, Southwestern Bell Telephone is investing $7 million in a fiber-based ATM video and data applications trial. Schools and medical institutions in six communities are using ATM and fiber technology to deliver classroom instruction; access remote data bases and the Internet; transmit large data files and information; and perform high-tech research projects across the state. This investment is a part of a plan to invest $231 million in the infrastructure in Arkansas through the end of 1996. Other enhancements include 100% digital switching equipment, complete CCS7 deployment, elimination of all party-lines, 97% conversion rate of interoffice facilities to fiber, fiber interconnection with all other local exchange carriers, fiber to Regional Medical Institutions and Universities, and eleven (11) FiberPark locations.

Arkansas Public Computer Network (APSCN), AR: SBC has designed and deployed a frame relay network throughout Arkansas to assist the APSCN in developing a statewide computer network for use by public schools K-12 educators, administrators, and policy makers. Administrative data and classroom instruction are being delivered over the network.

Distance Learning, AR: Southwestern Bell Telephone has installed compressed video units as demonstration projects in six secondary public schools and two universities in Arkansas to encourage the use of two-way interactive video technology. In addition, discounted tariffs for this service are available to educational institutions.

Northeast Arkansas Rural Educational Consortium, AR: In Arkansas, a video teleconference system, called the Northeast Arkansas Rural Educational Consortium, has been established between Arkansas State University and the Ozark Technical College in Melbourne, Arkansas and other state colleges in Beebe, West Memphis, and Mountain Home. Using Southwestern Bell Telephone technology, nurses are being trained in Melbourne via two-way interactive video. Currently, a growing number of classes are available through the network. In addition, the university will bring another remote learning site on-line at ASU's branch campus in White County, Arkansas.

UAMS Area Health Education's Centers (AHEC) & Rural Hospital Program, AR: In Arkansas, the University of Arkansas for Medical Sciences (UAMS) is using Southwestern Bell Telephone technology to provide two-way interactive video conferencing to six AHEC locations

and seven Rural Hospitals statewide. This compressed video network is used to train health care professionals and provide medical consultations in rural Arkansas.

University Network, AR: In Arkansas, all major universities (17 locations) are using Southwestern Bell Telephone technology to link campuses together for video conferencing and computer access capabilities. This technology has enabled these institutions to further their community outreach goals, increase student enrollment and class offerings, and expand services to business and industry.

CALIFORNIA

Distance Learning, CA: GTE installed a distance learning project so that students at Coastline Community College can take a four-year degree program through the California State University in Dominquez Hills without having to leave the campus. The cost to set up this distance learning projects was $115,000. In the area of Internet access, GTE provided primary and secondary schools in Santa Barbara with on-line access to the Internet through grants totaling $50,000. Similar grants were utilized in Oregon, Washington, and Idaho with disbursements equaling $150,000.

Education First: Pacific Telesis has launched an initiative to invest $100 million in 7,400 public K-12 schools, public libraries, and community colleges in Pacific Bell territory. The Education First initiative will extend free digital service to schools and libraries for data and interactive video applications through the end of 1996. The California Public Utilities Commission has also approved a Special Education Access Rate for ISDN services that will continue to ensure affordable telecommunications connectivity for all schools and libraries in the state. Pacific Bell will provide up to five ISDN lines per school or library. Installation charges will be waived, and monthly ISDN charges will be waived for up to a year. In addition, Pacific Bell will provide written references, tools, educational aids, and an educational resource team to work with teachers and librarians to develop effective curricula.

Roseville Telephone; Roseville, CA: Roseville recently filed its Technical Education (Tech Ed) program with the California PUC. The Tech Ed program will enable Roseville Telephone to provide up to five ISDN lines per site. ISDN installation charges will be waived and monthly basic service and local service area toll calls will be free for one year for video and data applications in learning sites. The program also offers an alternative credit of $3,000 for advanced data services. Roseville Telephone will also be working with the CPUC to establish an Education Access Rate to ensure affordable telecommunications for public schools and libraries in the future. Roseville will also work with the Detwiler Foundation to equip schools in the service area with computers. Estimated cost to be borne by company shareholders is $109,000.

Siskiyou Telephone; Fort Jones, CA: Siskiyou Telephone has provided toll-free Internet access to those communities in its service area. They have also provided parent-teacher voice mailboxes to the local schools. The company has also provided enough licensed copies of WordPerfect to the local high school to outfit a word processing class.

COLORADO

Boulder Computer Consortium Trial Network, CO: This Boulder trial connects supercomputers at the University of Colorado, the National Center for Atmospheric Research, the National Oceanic and Atmospheric Administration, the laboratories of the National Telecommunications and Information Administration, and the National Institute of Standards and Technology. Also participating are universities, libraries and several high-tech firms. This high-speed interconnection provided by US West allows these different organization to work on complex problems quickly.

Rural Mountain Distance Learning, CO: Red Rocks Community College in Denver installed a compressed video distance learning system connecting its Denver campus with high schools in Baily, Blackhawk and Idaho Springs. Using US West technology, the Colorado Technological Education Association of Colleges, Communities and High Schools (TEACH) allows Red Rocks to conduct numerous seminar and training courses, thereby overcoming the barriers of weather and distance to expand educational access in mountain communities.

CONNECTICUT

Southern New England Telephone, CT: Since 1988, SNET has administered an umbrella program called "SNET Links to Learning." "Links" is an umbrella term used to encompass the various educational initiatives sponsored by the company. Total investment since 1988 is $4 million. Most significant from a monetary viewpoint are the Telecommunications Incentive Grant Program (TIG) and the SNET Classroom Connections Program.

The TIG program began in 1990 and assists schools in developing and expanding the utilization of telecommunications in the educational environment. SNET provides technical and training support as part of the grant in addition to seed money permitting users to access the information infrastructure. Grants generally range from $2500 to $5000 and fund up to 80% of the project. Over 200 schools to date have been assisted.

The SNET Classroom Connections program is designed to increase the use of advanced telecommunications technologies in schools for K-12. The program will provide classroom phone lines with customized calling cards for toll access and voice mail to facilitate communication among teachers, parents, and administrators. The program will also provide

statewide toll-free dial-up Internet access wherein each school has an account established free of charge with an initial 300 hours of free on-line usage with preferential rates after 300 hours.

DELAWARE

Delaware Learning Project, DE: Bell Atlantic has committed to bring fiber optics to the doorstep of every high school, college, medical center, and government building by 1998 as part of an overall plan for infrastructure upgrades. The investment in upgraded connections for educational and government sites will amount to approximately $20 million. Bell Atlantic also successfully bid on connecting all public schools to the Internet using switched multi-megabit digital service.

In the meantime, Bell Atlantic and the State of Delaware are making use of present fiber optics to create better learning opportunities for K-12 students. Starting in 1995, two school districts were linked using two-way video distance learning for course such as algebra, Spanish, and philosophy. A tariff for distance learning has been filed and more schools have asked to be linked before the end of 1996.

Bell Atlantic also awarded a grant in 1995 of $100,000 to the Delaware Office of Telecommunications Management to provide for Internet and technology training for all Delaware K-12 teachers, librarians, and technology coordinators.

FLORIDA

Distance Learning, FL: GTE anticipates spending $20,000 per school to provide distance learning capability to primary and secondary education facilities in Florida to help implement the Florida Distance Learning network. With 927 schools eligible for such aid from GTE, the anticipated investment amounts to $18.5 million. GTE anticipates investing roughly $10 million per year over a ten year period in Texas to help establish a similar network. Total investment for 1995-97 will be $30 million. GTE made a similar contribution of $495,000 in 1995 for information infrastructure improvements in Wisconsin encompassing education and healthcare.

GEORGIA

ClassLink; Atlanta, GA: ClassLink is a cellular phone service for schools that places a cellular phone in the hands of every teacher for use in instruction, parent involvement, classroom management, and security. BellSouth Cellular implemented the program in 1995 at Price Middle School in 1995, an inner-city school of Atlanta. The school and housing project it serves are isolated from the amenities of the larger urban environment, and there are problems of crime

and poverty in the neighborhood. BellSouth contributed more than $220,000 in equipment and services. Teachers may take the phones out of the school so long as they pay for any personal non-school related charges. BellSouth will collaborate with the Cellular Telephone Industry Association (CTIA) to implement ClassLink in other schools in its operating territory and has already committed $435,000 to CTIA's national campaign to equip 100 schools.

Pembroke Telephone; Pembroke, GA: In January 1996, Pembroke Telephone connected the Bryan County, GA local high school and public library to the World Wide Web via local dial-up. In addition, the high school has six PPP accounts located in the media center, science and language labs to facilitate faculty and student research. This effort was accomplished through the cooperation of Pembroke and G:Net, an Internet provider formed as a joint venture between Pembroke and Wilkes Telephone and Electric. G:Net currently provides Internet service to seven counties.

IDAHO

Distance Learning, ID: A multi-use distance learning network connecting 15 school districts in southeast Idaho is using US West's network and equipment. The network is designed to provide elementary and secondary education, economic development training, adult education classes and medical training classes.

Idaho Educators Network, ID: Two hundred elementary and secondary educators from across Idaho are participating in this network launched in August 1995 to learn how to use telecommunications to bring additional resources and enhancements in their classrooms. US West, the Idaho Education Association and the five colleges or departments of education in Idaho are all cooperating on the project.

ILLINOIS

Curriculum Enhancement, IL: Over $550,000 in grants have been made to 22 Illinois urban and suburban schools and 32 teachers to incorporate advanced technology into their curriculum. These include computer and modem connections to access on-line educational programs.

Distance Learning, IL: An Ameritech interactive video pilot project ($237,000) connects the Illinois Math and Science Academy in Aurora, Ill., the nation's only three-year public, residential high school, and Walter H. Dyett Middle School, a Chicago public school utilizing multi-disciplinary studies and team teaching. The network is used for faculty partnering to develop customized curriculum at Dyett and to permit Dyett students to take customized courses from selected teachers at the Academy. A goal of the program is to enable the Academy to expand its recruiting outreach into the Chicago public schools.

EdTech, IL: A $500,000 Ameritech-Governor's EdTech grant was awarded to the College of Education at Western Illinois University to develop a hands-on curriculum model to train current and future teachers in the use of advanced communications, including two-way video distance learning (VDL). Western's main campus is connected to several public schools in the Springfield area.

Illinois Consolidated Telephone Company; Mattoon, IL: In 1994, Illinois Consolidated announced plans to connect 24 high schools in its service region to a distance learning network. Illinois Consolidated has since made an initial multi-million dollar commitment to distance learning by way of a two-to-five year gift of services to enable schools in its service area to begin the distance learning process. Monthly line charges for distance learning typically cost between $1,200 and $2,400, but schools within ICTC's service area will have those charges waived for two years. Additionally, the company has pledged the following at no cost to the school districts: extension of fiber optic lines to high schools in communities where ICTC has fiber optic networks; the installation of high speed T1 service to those schools lacking fiber optic connections; and the provision of $10,000 grants toward the purchase of classroom equipment through the Illinois Distance Learning Foundation.

Consolidated is also a founding member of the Illinois Prairie Consortium. The Consortium serves Central Illinois and was organized in 1992. Since then it has connected 33 corporations, high schools, colleges, and universities; including the University of Illinois at Champaign-Urbana and Springfield. Plans to equip additional high schools will be implemented as funds become available.

Rural Program, IL: A $300,000 grant made possible an interactive video project in central Illinois that connects Illinois Central College in Peoria with two high schools (Peoria Notre Dame and Delavan, a rural high school about 40 miles from Peoria). Selected high school students take college courses, and the two high schools share classes.

SkillLink, IL: A $300,000 Ameritech interactive video pilot project connects Lewis and Clark Community College in southwestern Illinois to two nearby manufacturers - Shell Oil and the Olin Corp. - permitting Shell and Olin employees to take college courses or customized worker training classes from the college without leaving the work site.

TeachLink, IL: A $323,000 two-way video pilot project links Waubonsee and Elgin Community Colleges, McHenry County College and Aurora University in a network to share nearly 100 classes that could not be sustained by enrollment at any one site.

INDIANA

Ameritech Exploration Network, IN: A contribution of $282,000 from Ameritech, in concert

with the Opportunity Indiana program, allows the Indianapolis Zoo to reach as may students in one week as it used to in one year. A two-way interactive network traversing the zoo allows students to take an "electronic field trip" and go behind the scenes to see how the zoo operates.

Buddy System, IN: In partnership with the Indiana State Legislature, Lilly Endowment, the Ameritech Foundation and Ameritech Indiana, the Buddy System provides computers, modems, and printers to more than 6,000 fourth-, fifth- and sixth-graders throughout Indiana at over 50 fifty schools. Students can use computers to access on-line services, communicate with each other and with their teachers. A 1994 evaluation showed that 90 percent of educators agreed that student work was more creative and of higher quality because of the computers, and 40 percent of the project's parents increased contact with teachers about their children's education. Since the project was initiated in 1989, nearly 20,000 youngsters have received the benefits of this nationally-acclaimed program.

Buddy Up With Education: Ameritech personnel were key in shaping and passing legislation to establish the Buddy Up With Education computer recycling program with the Indiana General Assembly. The intent of Buddy Up is to provide the process--and incentive--for used PCs to be easily and cost effectively recycled into Indiana's classrooms. Units meeting the minimum criteria for Buddy Up will provide to the donor a $125 per unit state tax credit.

Indianapolis Public School, IN: Indianapolis Public School teachers and students are using a 21st century communications tool in today's classrooms - an interactive distance learning network. The system, designed by Ameritech, uses more than 600 miles of fiber optics to provide interactive distance learning, video-conferencing and television programming to more than 93 locations. The locations include grade schools, junior high schools, high schools and selected administrative buildings in the IPS system.

Project Enable, IN: Enable is a program funded by the Ameritech Foundation and administered by Ameritech's Indianapolis Partners in Education Team. The program provides take-home computers for both teachers and students at Lew Wallace Elementary School in Indianapolis and exposes students to interactive simulations and other applications. Teachers use the computers to manage their day-to-day, administrative duties, and students can check out portable personal computers through the library lending program.

Smithville Telephone, IN: In collaboration with Ameritech, Smithville has succeeded in establishing advanced technologies in the classroom. The Better Education Through Telecommunications (BETT) project links over 5,500 students at eleven different educational campuses through the Partnership Network. Smithville has invested over $300,000 in the network, which uses DS3 fiber optic transmission to provide two-way broadcast quality video and audio with scaling options. Each classroom cost $32,000 to equip, including installation, cameras, three 27" TV monitors, a small monitor for the teacher, control board, remote control, camera-ready overhead, walking microphone, and a fax machine. Smithville underwrote the

costs for the first year of the program. Since August 1995, transmission costs have been between $40-60 per hour. To help control costs and cater to schools with limited needs and resources, a $35,000 portable classroom housed in several containers and hauled by van has also been provided for those schools whose needs require only periodic distance learning resources, not permanent installation. The network has already proved successful in that students have already had the opportunity to interact directly via interactive TV with their counterparts in both Germany and Japan.

TeleParent, IN: Voice mail is provided to Marion County (Indianapolis) schools through a partnership with Ameritech, local television station WRTV 6, Parent Power, an advocacy group that promotes parental involvement in schools, and other community organizations. The program, called TeleParent, allows daily communication between home and school. Currently, 82 schools participate, involving 4300 teachers and the parents of 51,000 students.

IOWA

Cooperative Telephone Company; Victor, IA: The company assisted the school district in obtaining an REA grant of $230,000 for distance learning. The funds were used to set up two distance learning classrooms; one DS3 equipped, the other T1 connected. Each room has its own dedicated 56kb circuit connection to the Internet and 25 PCs.

Between the Cooperative Telephone Company (CTC), Iowa Network Services, and the Brooklyn Mutual Telephone Company, the CTC has connected the BGM, HLV, and Kirkwood schools through a T1 video conference room, utilizing 40 miles of fiber optic cable. In addition to the T1 facility, CTC is also donating two 56kb data circuits for Internet connection, free of installation and recurring charges. The cost of this donation would be in excess of $12,000 annually.

South Slope Cooperative Telephone; Norway, IA: South Slope has established an extensive LAN for the local school district. Installation of the LAN included computers for the school district with an additional 20 Internet access ports and 20 central office lines installed free of labor. This system allows all students within the service calling area free access to the LAN and further routing to the computer system and the Internet. Initial costs totaled $60,000 while annual costs are projected at a little over $11,000.

KANSAS

A+ Network, KS: In Kansas, Southwestern Bell Telephone has installed a fiber optic network for a cluster of twelve schools, referred to as the A+ Network, using interactive video for distance learning. These sites are served by an analog system that provides simultaneous interactive video with up to four remote sites and one live classroom. The configuration of the teacher/classroom arrangement can be controlled via the network.

Fort Hays State University (FHSU), KS: Southwestern Bell Telephone donated $441,000, to Fort Hays State University, in May 1995. The majority of the donation, $433,000, will support academic areas emphasizing telecommunications and information networking and support FHSU's Information Enterprise Institute. The Institute will train and consult industry and government on information networking applications. The remainder of the endowment will support continuing education at the university in the areas of electronic interaction with area schools and interactive television training for teachers using distance learning networks.

TeleKansas II, KS: Southwestern Bell Telephone Company (SWBT) in Kansas is investing $64 million to provide distance learning services to schools. The investment, to be made between 1994 and 1997, will provide a fiber optic network allowing public and private educational institutions to obtain full motion interactive video.

KENTUCKY

Commonwealth Library, KY: In an effort to expand the benefits of the information superhighway beyond the classroom, GTE has entered into a partnership with the University of Kentucky to build a Commonwealth Library for all Kentuckians. The facility will provide the University and GTE an opportunity to transfer communications technology to the marketplace. The project is expected to be completed in 1997 at a cost of $850,000. Yet another project in Kentucky is a partnership between GTE, Southern Bell, the Kentucky Science and Technology Council, and the State of Kentucky to develop a rural telecommuting center. The project will establish a center for communication technologies to encourage entrepreneurism, distance learning, and interactivity. GTE's contribution thus far totals $50,000.

LOUISIANA

East Ascension Telephone; Gonzales, LA: The company has implementation plans to install a 56kb frame relay network linking the 20 local schools in its service area. Such a network would link the schools in a LAN environment with another and their administrative centers. If fully installed, EATEL would also provide free Internet access and serve as an Internet provider through a subsidiary. In order to evaluate its own needs and resources, the school district has

instead opted to run a pilot project in which each school has one free Internet dial-up access account assigned to a teacher. Access is provided free of charge by EATEL, but Internet usage is paid for by the schools. Acceptance of the larger free Internet and LAN package initially offered by EATEL will depend on the evaluation of this pilot, which is scheduled to run through the end of the 1996 calendar year. EATEL has also begun conducting Internet training seminars to demonstrate the resources available and how to best retrieve them.

Link to LANET, LA: BellSouth is providing 2335 private and public education institutions in Louisiana, including libraries and school boards, free installation of a SynchroNet or Megalink circuit from their respective location to the Louisiana Education Network (LANET). BellSouth is also providing reduced rates on monthly service charges. The aggregate value of these reduced rates and free installation amounts to $6.4 million per year. Students who are linked to the network will enjoy access to information, experts, teachers, and peers who can enhance their learning and their knowledge.

MAINE

NYNEX, ME: NYNEX will supply funding for a plan to provide access to information networks and services to those public libraries and K-12 public schools that presently lack adequate access. Up to $4 million a year for five years will be used to provide reduced rates and/or provide access to a statewide frame relay network, including Internet access. NYNEX's "backbone tier" of services will include frame relay (56 Kbs) connectivity, as well as shared services including: Internet and other gateway access, training, network monitoring, help desk, and University Resources Serving Users State-wide (URSUS) equipment. NYNEX also entered into a contract with the Maine Department of Education in 1995 to provide for a lower cost for in-state toll services for state schools, allowing them to triple their current level of usage at no additional cost, which will provide affordable access to on-line services, allow for lower-cost voice communications, and stimulate improved communications among schools, districts, libraries and the Department of Education. Additionally, in response to an RFP from the state of Maine, NYNEX entered into an agreement to pilot DS3 (45 Mbs) interconnection involving 6 high schools and several libraries, for purposes of extending distance learning from the university setting to the high school level.

Saco River Telegraph and Telephone; Bar Mills, ME: SRT&T assisted in establishing a WAN for a local school district in its service area. Maine School Administrative District #6 applied for a technology grant, available through the State of Maine, to link all of its schools via a WAN. The approved funds were used to purchase routers, multi-mode fiber optic cable, and T1 and 56kb CSU/DSU equipment for all of the district schools. Saco River provided single fiber optic connections to the three largest WAN sites and T1 or 56kb circuits to smaller sites, free of charge. The WAN will provide e-mail and file transfer capability, in addition to Internet access. Saco River also provides parent/teacher voice mail free of charge to any elementary or

secondary school in the district.

University of Maine, ME: A Maine statewide two-way audio/video, high-speed communications network connects the University system campuses and provides one way call-in audio/video to selected high schools. The network is utilized for college classes, teacher development and certification and community needs. The university's distance learning network will be expanded to high school, vocational school and library locations under the state's ATM initiative.

MARYLAND

Maryland Distance Learning Program, MD: In September 1994, Bell Atlantic bid on and won a contract from the state to build a distance learning network. The contract requires the company to equip every public high school, community college, and public university in the state with a distance learning classroom as Bell Atlantic upgrades its systems to fiber, amounting to approximately 270 sites. The $50,000 cost for each of these classrooms is borne by Bell Atlantic. Each school is eligible for a reduced rate (50%) two-way video service for the first three years. The service is capable of carrying four channels of broadcast quality, including "upstream" video and audio. The services are an option for the schools; acceptance is not mandatory. The half-price two-way video rate is an excellent value, especially for rural schools. The donation of classroom equipment for each school removes the major stumbling block facing most schools attempting two-way distance learning. The value of the donated equipment itself is over $13 million.

MASSACHUSETTS

Bunker Hill Community College, MA: A six-site multi-channel analog video network links the college and the Massachusetts Consortium for Education and Technology (MCET) with several Boston high schools. Classes are taught via distance learning from college to local high schools and to classes in other parts of the country.

The Computer Museum (Boston), MA: NYNEX was a major sponsor of "the Networked Planet," a permanent "walk through" exhibit. The exhibit showcases telecommunications technology through applications such as telemedicine, high speed Internet connections and interactive factual information on the public switched network. The exhibit, which opened in the fall of 1994, has hosted thousands of teachers and students.

Dorchester High School Partnership, MA: NYNEX's 25-year school-business partnership with Dorchester (MA) H.S. aims to improve access to employment and higher education, strengthen professional development and increase family involvement at this inner-city school.

Partnership activities have included provision of software and computers, access to corporate technical staff, introductory classes for teachers on PCs and the Internet, mini-grants for curriculum projects and formation of a school technology committee.

MCET Partnership, MA: MCET is a quasi-public agency which provides educational programming and other communications services to nearly all K-12 schools in the Commonwealth of Massachusetts. It operates the LearnNET, a computer network that gives students and teachers access to the Internet, E-mail and bulletin boards. MCET uses NYNEX's Infopath data network to link its member schools and to provide students and teachers with toll-free access to the LearnNET.

NYNEX is developing ways to package and price its services specifically for the education market. As a result, MCET has a joint agreement with NYNEX for a Predictable Rate ISDN to be offered to all non-profit Massachusetts schools beginning in January, 1996, at a flat monthly rate for a period of six months.

MCET has also conducted the One Voice Project in Cambridge, using NYNEX's call answering service to improve parent-teacher communications.

Minuteman Library, MA: NYNEX provides data networking and user support for the Minuteman Library Consortium in Massachusetts. This has allowed expanded access to library resources in homes and schools.

South Shore Collaborative, MA: NYNEX has a series of efforts in schools and communities throughout this region of Massachusetts, including the South Shore Educational Collaborative, Berkshire County and the City of Somerville, to provide technical and financial resources needed to develop integrated technology plans, including opportunities to link to the Internet.

MICHIGAN

Central Michigan University, MI: Ameritech donated $500,000 to "Education Central" to train over 7000 Michigan teachers how to use telecommunications technology in the classroom and how to utilize the Internet in their classrooms.

Central Michigan University Internet Training for Teachers, MI: The Ameritech Foundation donated $246,000 to establish an Internet training center for Detroit-area teachers in Tory. This is an extension of CMU's Education Central program available to any K-12 teacher.

Climax Telephone; Climax, MI: Climax funded $25,000 for computer lab facilities and has donated another $5,000 of computer equipment for the elementary school.

Detroit Public Schools, MI: Ameritech donated $300,000 to develop an interactive distance learning network to connect various high schools. This grant funds the network connecting the schools and training for the teachers as well as provides advanced classes for the students.

Focus: Hope Glazer Elementary School; Detroit, MI: A high-tech computer infrastructure supplied by Ameritech enables inner-city elementary school students to utilize the latest in educational technology and software to enhance their learning environment and learn the skills necessary to succeed in the Information Age.

Henry Ford Museum/Greenfield Village; University of Michigan-Detroit; Melvindale Schools, MI: Ameritech donated $652,000 to deploy a distance learning network linking Melvindale schools (with other schools to be added later) to the Museum/Village and U of M-D to permit integration of virtual field trips into everyday curriculum.

Hiawatha Telephone; Munising, MI: Partnering with Ameritech, Hiawatha has worked with schools in its service area to provide a technology link for an eastern Upper Peninsula telecommunications consortium. This system allows students at 15 sites in Chippewa, Luce, and Mackinac counties to take classes via two-way interactive television. Up to seven classes may be in session simultaneously. The system also allows persons to take courses through interactive TV at Lake Superior State University and Bay Mills Community College. Hiawatha also offers Internet access, voice mail, Centrex, data services, a full range of custom-calling features, and telecommunication services supporting telemedicine at a local hospital.

Jackson Community College, MI: Ameritech donated $400,000 to create an interactive distance learning video network that enables employee retraining at the job site.

Kalamazoo Center for Medical Studies (MSU Medical School branch), MI: An Ameritech donation of $768,000 to develop a computer/fiber optic infrastructure enables on-site medical student training to be significantly enhanced. The network also provides improved medical diagnosis and treatment capabilities for patients.

Lakeview Schools; Battle Creek, MI: Ameritech created a high-tech LAN in a model school which allows instantaneous access to information from any classroom.

Lansing-Jackson Distance Learning Pilot, MI: Michigan's first fully interactive distance learning network links seven high schools and colleges in the Lansing-Jackson area, enabling teachers and students in different locations to interact by audio and video. About 20 activities were conducted on this Ameritech-supplied network each week, including specialized courses that otherwise could not be justified for smaller groups of students at individual schools.

The Learning Village, MI: Ameritech donated $525,000 (in Michigan) to create an electronic network of 10 Michigan schools and 40 schools from Ohio, Wisconsin, Illinois, and Indiana

which enables instantaneous access by students and teachers to a vast array of information.

Michigan State University K-12 Internet Curriculum Development Grant (Education Avenue), MI: An Ameritech grant of $500,000 enables the MSU School of Education to develop 100 model lessons plans for K-12 teachers to integrate the use of Internet educational resources in the everyday classroom environment. Lessons plans are available to any K-12 teacher.

Mumford High School Compact Technology Center, MI: This high technology communications learning facility provided by Ameritech exposes students to the educational benefits of computers, laser discs, scanners and compact discs. A LAN links the technology center with teachers' offices, classrooms, and the library.

Northwestern Michigan College, MI: Ameritech donated $355,000 to create a fiber optic interactive distance learning network to a consortium of colleges and schools headed by NMC covering a five-county area.

Plymouth-Canton Schools, MI: A fiber optic, interactive distance learning network, a computerized library retrieval system, and other educational technologies supplied by Ameritech are being used to provide K-12 students with the tools of the Information Age as well as the content.

ThinkLink, MI: Fourth graders in the Warren Consolidated School District had their homes linked to their schools with Ameritech's $5 million fiber-optic "home learning" network. The two-year trial brought educational materials to home television sets. With a remote control and a mouse, youngsters controlled when and how they used the programs. Teachers assigned homework based on the programming and students' annual MEAP scores were dramatically higher than their counterparts without the service.

Wayne State University, MI: The African-American Archives Project maintained by Ameritech creates a multi-media database of materials on the history of education among African Americans.

Wayne State University Model Middle Schools, MI: An Ameritech donation of $400,000 to develop a high-tech computer/fiber optic infrastructure demonstrating the capability of modern technology to enhance the learning process and broaden the educational options available for K-12 students.

MINNESOTA

Blue Earth Valley Communications; Blue Earth, MN: Blue Earth Valley has purchased a group of three vacant building and renovated them into a 50,000 sq. ft. office complex. The key feature of this facility is its public video conference and training center. Through the Minnesota Equal Access Network (MEANS), the video conferencing center offers business and educational connections to the outside. The presence of the Blue Earth Ag Center helped a local employer secure overseas purchases of locally produced and packed vegetables. The purchases have created additional sales of 500,000 cases of produce, helping to ensure the continued employment of 200 employees.

Blue Earth Valley is also providing substantial support to the local school system and three neighboring school districts. The company has assisted with a grant application and pledged to install video switching equipment costing $115,000 which will extend the Ag Center's video conference capabilities into the schools. Further, the company provides free Internet access to local schools and libraries, waiving installation and local loop monthly charges for the schools. Consequently, local calling access is now available to all the company's rural subscribers.

Hutchinson Telephone; Hutchinson, MN: Hutchinson Telephone has been working throughout the past five years to install and lease fiber for the schools in its service area with the goal of connecting them to a distance learning medium. In late 1994, Hutchinson installed and leased fiber to the school district, enabling all of the schools to enter a WAN environment. In 1995, the company became an Internet provider, charging special rates for schools, libraries, non-profit organizations, and the local government. Plans are in progress with the local government to provide the entire community of Hutchinson with a WAN environment by the fall of 1996. Additionally, Hutchinson Telephone is in the process of providing Internet access to three other surrounding communities. Access will be provided by partnering with another telephone company or business that has the capabilities to support the services in their community, with an anticipated completion date in 1996.

Luminet, MN: Two national telecommunications leaders have joined together in an initiative to extend the reach of teaching and learning and provide the community of Winona, Minnesota with access to the information superhighway. Working in partnership, US West and Sprint have established a fiber optic ring around this Minnesota community to provide distance learning, access to government information, telemedicine, access to the Internet and other services.

Mankato Citizens Telephone; Mankato, MN: Mankato is working on the Minnesota Delivery of Southeastern Technology (MINDSET) program. The program will provide for the fiber optic transmission of interactive video and distance learning for 3 sites at technical colleges and a state university, with access to their interactive education video networks. A similar program with the acronym of KIDS, or Knowledge Interactive Distribution System, will provide distance learning for school districts by providing access to the video networks of technical colleges state-wide.

Mankato has also proposed to provide WAN access for a school district to an Internet provider. Finally, the company will also provide technical advice and assistance for schools in developing the curriculum to utilize these facilities.

MidTEC, MN: Mid-Minnesota Telecommunications Consortium (MidTEC) is Minnesota's largest post-secondary distance learning system. MidTEC leases 400 miles of fiber optic lines from US West to interconnect seven central Minnesota technical colleges. The system delivers 80 to 100 hours of classes per week and is also used for a variety of community meetings.

West Central Telephone Association; Sebeka, MN: WCTA, along with two other LECs, first helped establish interactive video conferencing in its service area in 1991. Since then, the company has, in partnership with five other LECs, expanded that initial network to encompass several technical colleges and schools in Northwest Minnesota. In 1994 and 1995, WCTA provided two local school districts with the necessary equipment and technical expertise to establish a 56kb Internet connection. The equipment, valued at $10,000, was installed free of charge, while the monthly access rate of $400 continues to be waived. To enhance the service, a community server was configured, along with a world wide web and FTP site, that provides each student and faculty member unlimited e-mail access. Ongoing system maintenance will continue to be provided by the company.

MISSOURI

Citizens Telephone; Higginsville, MO: The company has donated a considerable amount of equipment, including 9 PCs to establish a junior high school computer lab. Citizens has also connected the school system's two teaching facilities with fiber optics, establishing a LAN for the computers. The company also offers 20 Internet access connections to the schools at a reduced flat rate available for unlimited usage. Values for the donations total $13,000, not including the Internet access.

Missouri Interactive Telecommunications Education (MIT-E), MO: Mid-Missouri Telephone and Southwestern Bell Telephone Company have combined to provide classroom equipment and line lease costs for a T1 quad-split system which utilizes both fiber optic and full T1 copper telephone lines as the transmission medium. The Mid-Missouri cluster provides dedicated multi-point service between Methodist College in Fayette and Pilot Grove, Bunceton, New Franklin, Slater and Glasgow high schools. The SBC Foundation will support Central Methodist College in Fayette with a grant of $35,000 over the next two years in support of its distance learning applications.

Missouri Telecommunications, MO: Over the next four years, Southwestern Bell Telephone (SWBT) will invest at least $275 million a year in Missouri. In addition, SWBT will earmark at least $35 million of this investment a year to create a fiber optic network in every community it

serves and to incorporate distance learning and telemedicine applications into as many as 75 accredited schools or hospitals per year. The focus will be broadband video services. SWBT will also create at least five Telecommunity Center locations -- interactive video information centers -- before 1999.

Northeast Missouri Rural Telephone; Green City, MO: NMRTC first connected three schools in 1992 by installing 12 new miles of fiber to an already existing 40 mile circuit to provide interactive TV for teaching high school courses. In 1995, the company provided additional fiber facilities and donated $30,000 per site for classroom technology to two additional schools. One of the schools joined the network established in 1992. The other school joined with four others in establishing another ITV cluster.

Currently, NMRTC is in the process of providing the necessary fiber networking and donating $160,000 worth of technology for a telemedicine project which would allow 2 local county hospitals to connect with the Kirksville College of Osteopathic Medicine, the University of Missouri School of Medicine, and other small hospitals. The company is also involved in RAIN, a network of 10 small telcos endeavoring to provide Internet service to schools, libraries, and local residents in an area covering approximately half the rural area of northern Missouri. The service will cost residential consumers a flat fee of $20-25 per month.

Schools of the Future, MO: The SBC Foundation will make grants of $200,000 over the next two years to K-12 public and private schools in Missouri that have demonstrated innovative approaches to the use of telecommunications in enhancing the learning process.

Telecommunications Research Grants, MO: The SBC Foundation has made a $30,000 three-year grant to Park College, a $75,000 three-year grant to Northeast Missouri State University and a $300,000 three-year grant to the University of Missouri-St. Louis (UMSL) for the purpose of researching various telecommunications applications. The $300,000 grant to UMSL is in connection with the TeleCommunity Center project being built on that campus.

MONTANA

Range Telephone Cooperative; Forsyth, MT: The company has proposed establishing an educational interactive TV system linking 10 sites total, with those sites being distributed between service area high schools and community colleges. The network will be operated over DS3 links and should be operational by the early third quarter of 1996. Local call Internet access at discounted rates was made available to all schools at the beginning of January 1996. Interactive TV system costs will fall in the neighborhood of $750,000.

NEBRASKA

Great Plains Communications; Blair, NE: Great Plains has donated $123,000 in equipment and services to schools it serves in Nebraska over the past four years. GPC has provided video equipment and transport for an educational two-way interactive distance learning project based on T1 facilities. Additionally, Great Plains has donated multi-media computers and work station furniture to other schools. Services and equipment have also been donated to the Internet navigator project, a joint initiative with the State of Nebraska to put the high school in Grant, NE on-line and train users. In addition to these donations, GPC is also currently working with several other Nebraska LECs to engineer and deploy multiple distance learning video projects across the states, based on DS3 transport over fiber optics. Great Plains investment in the first of these multiple distance learning projects itself will be over $800,000.

Lincoln Telephone & Telegraph; Lincoln, NE: Lincoln has a number of projects underway. InterLinc will place 38 public access terminals in recreation centers, senior centers, ethnic community centers, and public libraries throughout the greater metropolitan Lincoln area. Network infrastructure and Internet access costs will amount to $108,000 over 18 months.

Project EduPort installed a fiber-optic connection linking Lincoln High School (the state's largest) to the information infrastructure. The port provides instant access to digitized films, information, and educational material using IBM's educational project. The link cost $15,000 to install, while transport of the images costs Lincoln T&T about $10,000 annually.

The Beatrice Connection will create a Metropolitan Area Network (MAN) connecting Beatrice Public Schools, the city of Beatrice, and Southeast Community College. Internet access and a WWW server will also be included. The commitment totals $10,000.

LinTel, a subsidiary of Lincoln T&T has contracted with Lincoln Public Schools to provide telecommunications products and services for the school district's 49 buildings. The 4 year project will provide new wiring and phone and intercom systems, including data communications networks and Internet access. The University of Nebraska-Lincoln is also being rewired. The projects were contracted at rates $950,000 below those that would be offered to standard business customers.

Lincoln T&T is offering frame-relay service to primary and secondary schools at a 35% discount. Annual costs total roughly $138,000.

Finally, Lincoln T&T is providing Internet access at a reduced rate to Crete Public Schools. The amount of this commitment is $8,000 over 18 months.

Nebraska Greenhouse, NE: US West contributed $1.8 million to urban and rural schools across Nebraska to deploy state-of-the-art Internet access to students and teachers. US West's