Approved: April 20, 2000
Date

MINUTES OF THE SENATE WAYS & MEANS COMMITTEE.

The meeting was called to order by Chairperson Dave Kerr at 11:00 a.m. on April 5, 2000 in Room 123-S of the Capitol.

All members were present except:

Committee staff present: Alan Conroy, Chief Fiscal Analyst, KLRD
Rae Anne Davis, KS Legislative Research Department
Debra Hollon, KS Legislative Research Department
Norman Furse, Revisor of Statutes
Michael Corrigan, Asst. Revisor of Statutes
Judy Bromich, Administrative Assistant to the Chairman
Ronda Miller, Committee Secretary

Conferees appearing before the committee:
Dr. Lynne Holt, Kansas Legislative Research Department
Don Heiman, Executive Branch's Chief Technology Officer, DISC
Greg Rasmussen,
Doug Heacock, KANREN
Duane Johnson, State Librarian
Craig Grant, Kansas National Education Association
Jon Federico, Kansas Cable Telecommunications Association

Others attending: See attached list

HB 2591: Sub for HB 2591 by Committee on Education – State education technology network, establishment

Dr. Lynne Holt, KLRD, appeared before the Committee and distributed copies of a committee report from the Special Committee on Education (Attachment 1) and of a proposal to the Special Committee on Education regarding the next step toward a statewide network for schools, libraries, and state agencies in Kansas (Attachment 2). Dr. Holt distributed copies of a summary of KAN-ED (Attachment 3) and told members that **HB 2591** as amended by the House Committee was separately referred to the House Education and Utilities Committees, and the bill as it appears before Ways and Means includes amendments made by both of those committees. She stated that the bill was written to address disparity in the amounts that school districts across the state pay for internet services and the bottom line is that this bill would provide cost savings for schools in remote areas. She told who would be served by KAN-ED, reviewed the possible applications of KAN-ED, explained how KAN-ED will be managed, detailed the plan for obtaining KAN-ED services, noted how the contracts between DISC and the vendors would be handled, explained the role of KANREN in KAN-ED, discussed the importance of Internet 2, described how KAN-ED would be funded, and reported on how E-Rate discounts could be used for KAN-ED. Dr. Holt noted that as the bill is written, any kind of technology provider would be able to bid for the services, DISC is not precluded from contracting with KANREN, and there is no appropriation in the bill.

In answer to questions, Dr. Holt stated that the bill tries to make sure no private contract is abrogated if a school district already has Internet I services. It was noted that Internet II is used primarily for research and education and certain databases are available only on Internet II. It was stated that no private companies offer linkage to Internet II. Dr. Holt noted that KAN-ED would link all districts and libraries at one point of presence and school districts will pay costs for wiring their buildings. There was some discussion about whether KAN-ED would provide an incentive or a disincentive for the private sector.

Don Heiman, Executive Branch's Chief Technology Officer, DISC, appeared before the Committee in support of **HB 2591** and reviewed the written testimony which he presented to members (Attachment 4). Mr. Heiman also handed out a glossary of the terms which were frequently used in discussion about KAN-ED (Attachment 5) and the breakdown of costs associated with the service (Attachment 6). In

discussing costs, Mr. Heiman stated that cost savings are dependent on several contingencies including E-rate discounts and the agency's ability to negotiate aggressively with industry for favorable pricing. In response to questions, Mr. Heiman stated that DISC will be short $1.1 million in covering costs of installation and the first year's operation, and the annual recurring cost if the agency is successful in obtaining the E-rate discounts every year will be $4.5 to $5 million. In answer to a question, Mr. Heiman stated that the Federal Commission has to act on the E-rate and other contingencies on or before May 7.

Greg Rasmussen, Coordinator of Educational Technology with the Department of Education, appeared before the Committee and summarized the Department's support of **HB 2591** (Attachment 7). He stated that he believed KAN-ED is critical to the future of schools and will play an instrumental part in the future of Kansas. In response to a concern that KAN-ED might be perceived as providing the greatest benefits for those districts that have done little to access services on their own, Mr. Rasmussen stated that some districts are not prohibited by cost alone, but also by the inability to get an internet connection big enough to support their connections. Members expressed some reservation about the reliability of two year old statistics regarding computers.

Doug Heacock, President and CEO of KANREN, distributed and reviewed copies of his written testimony in support of **HB 2591** (Attachment 8). He provided background information regarding three of the networking entities involved in the KAN-ED project. In answer to a question, Mr. Heacock stated that the application of KAN-ED which provides NEXRAD weather data does not parallel something already in existence.

Duane Johnson, State Librarian, reviewed his written testimony in support of **HB 2591** (Attachment 9). Mr. Johnson spoke to the benefits of the proposed network to Kansas libraries, noting that 14% of the public libraries have no Internet connection and 62% have low speed access to the Internet. In answer to a question, he stated that the state library currently pays for low speed access.

Craig Grant, Kansas National Education Association, presented his written testimony in support of **HB 2591** (Attachment 10). He stated that he hopes KAN-ED provides inservice for teachers as well as help for students and connectivity between schools.

Jon Federico appeared on behalf of the Kansas Cable Telecommunications Association to offer "qualified" support of **HB 2591**. He reviewed his written testimony which enumerated KCTA's concerns about the bill (Attachment 11). After hearing the testimony of other conferees, he also voiced concern about references to T1 which is specific technology that the cable companies cannot offer and about the ability to utilize existing cable technology with the purchased network. In response to the latter concern, Mr. Heiman told members that the connectivity of the school districts to the backbone is in addition to what is already in place, and it is the Department's intention to use existing infrastructure rather than replace it. To that end, he noted that he is committed to not advocating or selling his own structure. It was noted that the bill does not reference specific technology and that current statute defines telecommunication services as including data transmission services. Mr. Heiman added that data transmission services includes cable.

Because of time constraints, the Chairman requested that Committee members seek answers to their questions and he would survey them for the level of interest they had in acting on **HB 2591** prior to the next meeting.

Senator Jordan offered a motion which was seconded by Senator Morris to approve the minutes of the March 29, 2000 meeting. The motion carried on a voice vote.

The Chairman adjourned the meeting at 1:00 p.m. The next meeting will be April 6, 2000.

SENATE WAYS & MEANS COMMITTEE GUEST LIST

DATE: April 5, 2000

NAME	REPRESENTING
MARK SALMANS	USD 228 HANSTON
Alan Weis	KTEC
DIANE JOHNSON	STATE LIBRARY
ANDY SCHARF	DISC
Don Herman	CITO Executive Branch
Bruce Roberts	DISC
Sullivan	DISC
Brilla Scott	USA
Jacque Oakes	SQE
Craig Grant	HNEA
John Pinegar	State Independent Telephone Assn.
Harold Shultz	USD 437
Scott Brunner	DOB
	ISSPD
Sal Tayani	Dept of ED
Chris Clarke	LPA
ALEC COUGHLIN	Rep. Carl Holmes
DOUG HEACOCK	KANREN
Dave Northwood	KANREN
MC Pomatto	PSU

SPECIAL COMMITTEE ON EDUCATION

NEW METHODS OF DELIVERING INSTRUCTIONAL MATERIALS AND SERVICES TO K-12 STUDENTS AND CONNECTING SCHOOL DISTRICTS TO A STATE COMMUNICATIONS BACKBONE*

CONCLUSIONS AND RECOMMENDATIONS

The Special Committee on Education makes recommendations on two of the topics assigned to it in this report. With respect to one topic (new methodologies of delivering instructional services to K-12 students), the Committee recommends that there be an ongoing dialogue with the State Board of Education on the issues raised in the Distance Learning Task Force's preliminary report on virtual or online education. With respect to the second topic (connecting school districts to a state communications backbone), the Committee recommends the introduction and passage of a bill to establish a state education technology network (KAN-ED).

BACKGROUND

The Special Committee on Education was charged to review two topics that, due to their interrelated nature, are addressed together in this report.

- The first topic was requested by the Chairman of the House Committee on Education. This topic addresses new methods of delivering instructional materials and services to K-12 students, including, but not limited to, infrastructure requirements, curriculum issues, instructional skill requirements, and school funding formula implications.

- The second topic has its origin in a task force proposal to the Kansas State Board of Education which was considered by the Appropriations Subcommittee assigned to the FY 2000 budget of the Kansas Department of Education. The proposal requested funding for an education network to connect all the school districts and interlocal cooperatives in Kansas to a state backbone for purposes of Internet access. (A backbone is a high-speed connection within a network that connects shorter, usually slower circuits.) A portion of the requested funding would provide greater bandwidth (capacity of a medium to transmit a signal) and enhanced services to 25 Kansas school districts. The House Appropriations Subcommittee recommended this proposal be considered further by an interim committee. In addition, both the House Education Committee and the House Utilities Committee requested interim consideration of this topic.

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* HB 2591 was recommended by the Committee.

COMMITTEE ACTIVITIES

The Special Committee on Education devoted two meetings in August and September to a review of issues related to delivery of instructional services using technology and connecting of educational institutions to a statewide backbone. The first topic focuses on deployment of technology within and between schools in a school district. The second focuses on the means of expanding the applications of that technology and number of users of those applications through connection to the state backbone network. These topics are interrelated because the value of a network increases with use. If students and teachers have access to technology and training that enables them to more extensively use the network's services, they will benefit more from school district connection to the state's high-speed backbone. If they have in their classrooms and labs access to needed hardware, software, and technical support, they can make optimal use of the statewide network.

Delivery of Instructional Services

At its August meeting, the Committee heard a panel discussion on why creative thinking is needed in order to modify existing methods of delivering instruction in schools. Panelists included: the State Board of Education's Commissioner, the President of the Kansas Technology Enterprise Corporation (KTEC), the Superintendent of the Haven school district, and the Superintendent of the Basehor-Linwood school district. Other presentations addressed the impact of new technologies on:

- School buildings and classrooms (the Interactive Distance Learning Network Coordinator of the Southeast Kansas Distance Learning Network—Greenbush; the Assistant Superintendent and Director of Instructional Computing, Lawrence school district);
- Curriculum issues, such as how to incorporate technology into school curricula (a teacher and students from Uniontown High School and an elementary school teacher from Topeka);
- Instructional skill development and support (faculty of the University of Kansas and Emporia State University); and
- Library support for K-12 education (librarians from Holcomb and Salina's Instructional Media Center).

Specifically, the Committee heard presentations on the use of technology, as it affects:

- ***Employment Growth and Career Choices in Kansas***. From 1991-1997, information and communications led other industry sectors in terms of employment growth. In Year 2000, 65 percent of the labor market is projected to be in the information technology area. Moreover, there are currently 2.3 million Internet-related jobs and 346,000 unfilled information technology jobs. Despite the recent and projected growth in information technology employment, Kansas ranks only 36th in the nation on percent of classrooms with Internet access. This finding raises the concern about the preparation of K-12 students for future employment in the fastest growing sector of the economy.
- ***New Methods of Instruction***. The Committee heard two presentations providing examples of how technology can be used for distance learning.

  Virtual Schools and Report on Virtual Schools. Technology can make a class lecture, a teacher's assistance to students, or library resources available 24 hours a day in a virtual or online school. Through this type of instruction, the concept of schools is no longer confined to bricks and mortar. For example, the Basehor-Linwood Virtual Charter School offers

online home-based instruction to over 325 K-12 students in 30 counties in Kansas. Each student has an iMac computer at home and access to a password protected website for instruction, homework, and collaboration with staff and other students. In addition, students can access educational facilitators and support staff online, as well as enrichment materials, activities, and field trips. Students enrolled in the virtual school receive either the school district's curriculum or a personalized curriculum, career counseling services, and standardized testing and pre- and post-assessments administered by the Basehor-Linwood school district.

The Committee received a preliminary report on virtual schools prepared by the Distance Learning Task Force established by the Commissioner of Education. The report includes a statement of philosophy and responds to questions concerning student enrollment and credits, monitoring attendance, monitoring the quality of instruction, determining student mastery, and determining sources of payment and funding for online courses.

Interactive Video. Technology enables students to learn through interactive video presentations in or outside of classroom settings. For example, students served by the Southeast Kansas Education Service Center (Greenbush) have had interactive video conferences with: NASA astronauts at Johnson Space Center, high school students and teachers in Russia and Japan, Congressional Representatives in Washington, D.C., and state elected officials. Instruction using full motion, two-way interactive video services requires investments in classroom and network equipment, availability of technical support, and ongoing scheduling to coordinate use of equipment and staff.

- ***Wiring Classrooms and Buildings***. Wiring classrooms and buildings in school districts affects infrastructure planning and technical support, as was discussed in a presentation by the staff of the Lawrence school district. Wiring initiatives also affect teachers' and administrators' classroom responsibilities, policies on computer use, and assessments of student achievement, as explained by administrators, teachers, and staff of the Auburn Washburn school district.

Methods of Connecting Facilities. School districts have been using various methods of connecting their facilities to Internet service providers. Historically, the most prevalent form of connection has been through dial-up modems which have a limited bandwidth. Nearly one-third of Kansas school districts still rely on this type of connection to some extent. Modems can be used by only one person at a time. Moreover, they cannot be used for transferring large data files and arranging video conferences. In recent years, schools wanting high-speed Internet access for their teachers and students have relied increasingly on wire line connections using enhanced services provided by telephone companies. However, cable modems used by 32 Kansas school districts are rapidly becoming viable competitors to telephone line-based connectivity services and wireless connectivity used by 34 Kansas school districts also is becoming more prevalent. (See the Fall 1999 survey by the Kansas State Department of Education for data on connectivity in Kansas school districts.)

E-Rate Funding. Due to availability of federal E-rate funding, certain school districts have invested in internal wiring and connections. E-rates have enabled school districts meeting certain criteria to receive discounts for those investments, in addition to discounted rates for Internet access and telecommunications services. For the 1998-1999 school year, 202 Kansas school districts received E-rate funds that totaled just under $9.7

million. Of that amount, $1.75 million was applied to internal wiring and connections.

Lawrence. The Assistant Superintendent of the Lawrence school district, together with the Director of Instructional Computing, described the development of the district's network. In 1996, after four years of planning, the Lawrence school district adopted a technology plan. The school district contracted with Sunflower Cablevision for fiber connections. The school district faced challenges in networking its schools given the age of some of the buildings, their architectural design, and the presence of asbestos. Based upon their experiences, the conferees recommended that school districts implementing technology plans consider: changing technologies to ensure the best connection for the money; needed investments in network upgrades; and ongoing technical support and training.

Auburn Washburn. The Committee visited Washburn Rural High School. The Auburn Washburn school district contracted with Multimedia Cablevision for the installation of fiber within and between its schools. Information was presented on several applications made possible through high-speed connections, including science instruction provided to 2nd grade students via the Intranet (a computer network which relies on Internet protocols and is used for the internal purposes of a school, company, or other group), and on the impact of the new technology on the school district's teacher training, curriculum development, and assessment tools.

- **Integration into the Curriculum**. Technology, which is integrated effectively into coursework, can enhance a student's or teacher's ability to research, analyze, apply information, communicate, and engage in collaborative writing. The Committee heard examples of how technology is integrated and how such integration is encouraged through federal and state initiatives.

History Course. A student from Uniontown High School demonstrated effective use of technology by presenting a nationally-recognized documentary film she produced on the impact of the Tuskogee Syphilis Experiment. (This was an experiment conducted by the U.S. Public Health Service which denied treatment for syphilis to certain African-American men, the intent of which was to compare the effect of the disease on African-Americans and Caucasians.) Using the Internet, the student interviewed historians and participants in the study.

Technology Literacy Challenge Fund. This federally-funded program promotes technology integration through the use of local, state, and private sector partnerships. The program's goal is to ensure that all students are technologically literate by the beginning of the 21st Century. The Kansas Department of Education distributes this money through competitive grants to school districts. In the third program year (FY 1999), the Department awarded 77 grants ranging from $15,000 to $70,000, totaling $3,061,000. These grants were targeted to:

- student leadership programs, such as the Generation www.Y Program, a student leadership conference, and Camp Techiwannabie;

- technology integration using the TAKE a STEP framework, which consists of standards used by teachers and students to assess their understanding of educational technologies; and

- professional development through technology-related workshops and the SRC*TEC electronic survey and measurement tool, Profiler. This assess-

ment tool, which relies on the TAKE a STEP framework, enables teachers to evaluate their competency in technology integration.

- **Preservice and Inservice Teacher Training**. One of the greatest challenges for teachers is learning how to effectively integrate technology into their courses. According to a recent article in *Education Week* (September 23, 1999), "the best integration training does more than simply show teachers where in a curriculum they can squeeze in some technology. Instead, it helps them learn how to select digital content (software tools) based on the needs and learning styles of their students, and infuse it into the curriculum rather than making it an end in itself." Surveys and studies continue to confirm that a lack of training is the most important obstacle inhibiting teachers' use of computer technology and software.

  Preservice and inservice teacher training on technology integration is offered at various Kansas postsecondary institutions. For example, Emporia State University offers a course titled *Internet Uses in Education* for prospective K-12 teachers on how to use the Internet for: finding and using lesson plans; using on-line and cooperative education with students; subscribing to listserv lists in education; using ERIC online (a comprehensive bibliography of educational materials); accessing and employing web search engines in education, handling computer files; and web page design. Master's degree courses also are offered by Emporia State for practicing teachers in preschool and K-12 who wish to apply technology and related software to teaching problems and procedures.

- **Library Resource Availability and Applications**. Online access to library resources is an important component of K-12 technology-based instruction. For example, Auburn Washburn schools use three primary Internet resources: an online encyclopedia system; an index containing over 400 magazines; and a social issues research database containing full text magazines and newspaper articles. In addition, online college courses are offered on using automated information resources, such as those available at Auburn Washburn. A course offered at Emporia State University provides students with necessary skills to: select and develop a research topic and effective search strategy; find appropriate resources for identifying research materials; and use both library catalogs and electronic databases to locate information resources on a selected topic. These research skills could be incorporated into courses for K-12 students.

Connecting School Districts to a State Communications Backbone

There are several networks connecting educational institutions in Kansas, but there is no statewide network which links all the educational institutions to a single fiber optic backbone. (Fiber optics is a transmission technology that uses light as an information carrier and has enormous bandwidth capacity.)

The policy issue before the Committee is on the advisability of funding the establishment and maintenance of a statewide network that would provide most or all Kansas educational institutions voice, data, and video services through access to a high-speed, high-bandwidth fiber optic backbone.

Technology-Based Education Networks. At its August and September meetings, the Committee heard presentations on several technology-based education networks:

- The KANS-A-N network, administered by the Division of Information Systems and Communications (DISC) within the Kansas Department of Administration, which

provides voice, video, and data services predominantly to state agencies and Regents universities;

- Southwestern Bell's Broadband Education Service—Interactive Distance Learning, which provides full-motion two-way interactive video services to four clusters of Kansas school districts;

- The Great Plains Network, which is a consortium of Great Plains states, including Kansas, dedicated to supporting research through the use of networking technology (very high speed links to the Internet);

- The Kansas Research Education Network (KANREN), which provides high-speed Internet service, consulting, network monitoring and diagnostics, and training and technical support to its 59 nonprofit consortium members consisting of all the Regents institutions and the KU Medical Center, 12 private colleges and universities, 12 community colleges, 17 school districts, six public libraries, and five other education and research-based institutions;

- The Missouri Research and Education Network (MOREnet), which is an expanded version of KANREN, providing dedicated Internet connections, network and security services, technical support, training, electronic subscriptions, and other services to public and private postsecondary institutions, almost all Missouri school districts, most of Missouri's public libraries, state agencies and Missouri communities; and

- Washington's K-20 Network, which provides high-speed connections to the state backbone for all the universities, community and technical colleges, and school districts in the state. (Libraries are scheduled for high-speed connection to the state backbone in the future.)

(These networks are described in greater detail in a staff memorandum to the Committee dated September 20, 1999.)

KAN-ED Proposal. At its September meeting, the Committee considered a proposal for a technology-based education network which was crafted by various representatives of the education and information technology community, including: the Commissioner of Education; the State Librarian; the Director of KANREN; the Director of DISC; the Assistant Vice-Chancellor for Information Services, University of Kansas; and the President of KTEC. The proposal establishes the KAN-ED network. The network is an expansion of the state's high speed backbone which is currently managed by DISC. KAN-ED would provide Internet connectivity to 304 school districts, 330 public libraries, and 28 education service centers (school district interlocal cooperatives and school district cooperatives) in Kansas and would make available state-of-the-art high bandwidth connections to 25 school districts and 20 libraries for research and development of advanced network applications.

The proposal requires DISC, through its Bureau of Telecommunications, to provide administrative services, engineering services, the Network Control Center, backbone circuits, and contract management. The proposal also requires DISC to partner with KANREN for technical support and other network support to schools and libraries. Preliminary estimates for investments in the proposed KAN-ED network total $17.5 million for the first year and $13 million in subsequent years.

KAN-ED Bill. Following deliberations on the proposal, the Committee requested that a bill be drafted, with input from the proposal's authors, to codify the concepts of the proposal summarized above. The key provisions of the bill are summarized in the conclusions and recommendations section of the report.

Benefits of KAN-ED. Proponents cite the following benefits of the KAN-ED network:

- KAN-ED could encourage coordinated planning, purchasing, monitoring, and service delivery, thus maximizing state resources and expertise.

- KAN-ED would increase DISC's leveraging capability as a volume purchaser of telecommunications goods and services which, in turn, could spur investments by vendors in more sparsely populated parts of the state.

- KAN-ED would enable the state to realize savings from increased purchasing power for online databases and network components.

- KAN-ED would make it possible for DISC to average telecommunications costs for "the last mile," thus equalizing connectivity rates among all school districts.

- KAN-ED might cause savings to result from centralized E-rate discount applications for network infrastructure. (Presumably, school districts would continue to apply individually for e-rate discounts to wire schools under their jurisdiction.)

- KAN-ED could make it more affordable for many small businesses to engage in e-commerce as they would be in closer proximity to network nodes resulting from an expanded state backbone.

- KAN-ED would enable successful education programs to be more easily expanded and offered statewide.

- KAN-ED would enable educational opportunities to be maximized through expanded web-based and, later, video-based course availability and would increase partnerships between educational institutions and sharing of curriculum and courses.

- KAN-ED would provide a means of offering preservice teacher training and continuing education interactively throughout Kansas.

- KAN-ED would make available, through KANREN, information technology staff support for all schools and libraries on a more equitable basis; a larger network may be better positioned to recruit and retain such staff.

- KAN-ED could encourage the adoption of uniform technical standards for interoperability and future growth of information services.

- KAN-ED would keep Kansas traffic in Kansas because the network backbone will allow data to flow from one connected site to another and the traffic will not have to go onto the commercial Internet where it could move all over the country from one national provider network to another. Therefore, transmission speed and performance could improve.

- KAN-ED funding for state-of-the-art high bandwidth connections to 25 school districts and 20 libraries should promote research and development of advanced network applications and lead to more efficient use of integrated voice, data, and video services at the desktop.

Conclusions and Recommendations

With respect to the subject of new methodologies of delivering instructional services to K-12 students, the Committee recommends that there be an ongoing dialogue with the State Board of Education on the issues raised in the Distance Learning Task Force's preliminary report on virtual or online education. The report includes a statement of philosophy and responds to questions concerning student enrollment and credits, monitoring attendance, monitoring the quality of instruction, determining student mastery, and deter-

mining sources of payment and funding for online courses.

With respect to the issue of connecting school districts to a state communications backbone, the Committee recommends the introduction and passage of a bill to establish a state education technology network (KAN-ED). The bill would establish a mechanism for development of a plan to connect school districts, education service centers, and libraries to the state's backbone, and for approving and funding the hardware, software, and technical support needed to implement the project objectives outlined in the plan. In addition, the bill would establish the three-member KAN-ED Information Technology Committee within the Department of Education. The Committee includes representation from the State Department of Education, the State Library, and the State Board of Regents. The Committee would meet in an advisory capacity to develop the connectivity plan and to engage in other education-related initiatives involving collaboration. Finally, the bill would subject all contracts for KAN-ED telecommunications services to the statutorily-authorized contractual procedures governing DISC's acquisition of telecommunications services.

KAN-ED:

The Next Step Toward
A Statewide Network for
Schools, Libraries, and State Agencies in Kansas

A proposal to the
Kansas Legislative Special Committee on Education
September 22, 1999

By
The Kansas Information Technology Action Committee (KITAC)
And
The Kansas Education Technology Advisory Board (KETAB)

KAN-ED: The Next Step Toward A Statewide Network for Schools, Libraries, and State Agencies in Kansas

The Purpose

The State of Kansas needs a comprehensive strategic investment proposal for providing Internet connectivity and technology integration for all of its schools, libraries, and state agencies. This proposal to the Kansas Legislative Special Committee on Education presents the rationale, goals, budget and schedule for developing and implementing this blueprint. The Kansas Information Technology Action Committee (KITAC) and the Kansas Education Technology Advisory Board (KETAB) collaborated to develop this joint proposal, and they are pleased to present it for legislative review and action.

The Vision

As we enter the 21st century, every citizen of Kansas should benefit from the global digital revolution in information technology. To achieve this vision, all Kansans should be provided with the opportunity, training and resources to use and exploit electronic information and technologies for their betterment now and in the future.

The Overview — The Digital Divide

The 21st century will be the age of electronic online information. The ability to access, integrate and transform information into knowledge will be fundamental to national security, economic growth, education, human health, natural resources management and improving the quality of life. Information and its application will be the engines of commerce. The medium and format for this information will be increasingly electronic, digital, and online.

States must, therefore, participate fully in the digital information technology enterprise. They must be able to learn, live with, and exploit information technology, or they will be left on the wrong side of the digital divide. Their businesses will not be able to compete and win in today's

global markets; their citizens will not be able to access the goods and services they need; and their schools will not be able to prepare children for the jobs they will be expected to fill in the future.

Delaying this investment will only widen the digital divide. In the past fifty years alone, the information technology sector accounted for one-third of our economic growth. Jobs in the information technology sector are now paying 80% above the private average wage. Firms are using information technology to market, customize, and deliver products; and they are achieving speed, flexibility, and proximity to their customers [1]. Between 1995 and 1998, information technology producers, while accounting for only about 8% of the U.S. Gross Domestic Product, contributed on average 35% of the nation's real economic growth. By 2006, almost half of the U.S. workforce will be employed by major producers or intensive users of information technology products and service [2]. Clearly, to function successfully and competitively in our society, literacy in information technology is now a basic skill. Is Kansas prepared?

These trends are already affecting Kansas. In 1997, information and communications technologies accounted for nearly 30,000 jobs in Kansas, making it the fourth largest and fastest growing employment sector in the state's economy. Recognizing the need for information technology literacy, Kansas schools invested in computers, and in 1997, ranked first in the nation in the number of computers per 100 K-12 students [3].

Unfortunately, stand-alone computers cannot bridge the digital divide. They must be connected to the vast and global resources of the Internet if Kansas students will enter and explore the world they will lead. Currently, Kansas ranks 36th among the 50 states – and below many neighboring states -- in providing Internet access to the classroom [3]. The digital connections must be made now to realize the economic and educational connections for every Kansas citizen in the future.

Visionary states have already made the digital commitment.

- Pennsylvania is upgrading the state's public network to provide advanced services and increased bandwidth [4].

- All of Maine's schools are hard-wired to the Internet. Its citizens can get hunting and fishing licenses on-line, and the state is pursuing real-time town meetings via the Internet [4].
- Missouri's MOREnet provides dedicated Internet connections, training, network and security services, technical support, consulting, electronic subscriptions, and other services to the University of Missouri, K-12 schools, public libraries, community networks and state agencies [5].
- Washington's K-20 Network connects students and educators at every level, providing them with Internet access, videoconferencing, and unprecedented opportunities to share educational resources. In thanking legislators for their role in the development of the network, a proud Governor Gary Locke noted, "Whether you live in Greater Spokane or Seattle, or the many rural areas throughout the state, all students will have equal access to high quality learning opportunities through technology [6].

The choice for Kansas could not be clearer. Kansas can emerge as a leader in this arena, or it can be left in the dust. Kansas can provide all of its students with a world-class education or only the lucky few. Kansas can enable all of its citizens to have access through libraries to information and services that improve their quality of life, or it can limit their ability to obtain government data, seek medical advice, or enroll in courses to improve their job skills. Kansas can enable its agencies to operate with greater cost-efficiency and cost-effectiveness, or it can reduce service and responsiveness to its growing constituencies.

The answer too is clear. Kansas must invest in its public network infrastructure to emerge on the right side of the digital divide. Postponing this investment will foreclose opportunities to participate in the world of digital information now driving economic growth and rising living standards. Playing catch-up in information technology is an expensive policy the state will not be able to afford fiscally or educationally.

This is especially true in states with small, geographically dispersed populations, such as Kansas, where Internet connectivity to schools and libraries is more costly. In more densely populated states, the fixed costs of this service can be distributed among a larger number of subscribers. Commercial providers have little incentive to extend their networks to sparsely populated regions

where high costs erode profits. Thus, in states with small, geographically dispersed populations, government must make the initial investment to stimulate network development and usage to levels at which commercial investments become viable and self-sustaining.

Opportunity

The state of Kansas already has existing government, academia, and private sector information technology resources. These resources should be leveraged to build an integrated and comprehensive information and communication technology network for all Kansans. Financial leverage of these resources will require smaller investments by all stakeholders and result in quicker implementation.

Goals

The goal is to create an integrated state network that provides:

- Higher quality education and careers for all Kansans.
- Greater competitive position for Kansas.
- More Kansans qualified for higher paying, high skilled knowledge jobs.
- Equal access to electronic information and services.
- Life long learning.

Benefits

There are many benefits that will be realized by the 304 school districts, 330 libraries, and 28 education service centers as a result of implementation of the KAN-ED network.

KAN-ED will enable:

- Statewide access to electronic databases.
- Aggregated subscriptions to on-line periodicals and journals.
- Development of curricular materials for local as well as statewide use.
- Shared instructors, especially in subject areas where there is a shortage of certified personnel.
- Access to the wide variety of enrichment materials available through government agencies such as NASA, EPS, and the Library of Congress.
- Access to the informal sciences, arts, and humanities education materials through museums.

- Provisions for customized training and education to students of all ages.
- Increased opportunities for teacher in-service training.
- Makes the infrastructure more affordable and easier to maintain.

The Investment Recommendation

The State of Kansas should invest in a comprehensive KAN-ED plan for providing Internet connectivity and technology integration for all of its schools districts, libraries, and education service centers. The state is well positioned to do so, given the existing network infrastructure, the leadership in networking initiatives demonstrated by the Regents universities, the state library's interlibrary loan network, the presence and growth of information technology industries in Kansas, the applicability of information technology to Kansas' agricultural and industrial sectors, and the strong spirit of cooperation apparent among the state agencies involved in the public networking enterprise.

The major components of this investment proposal are:

- the network
- network services, training, and content
- KAN-ED management
- The implementation plan and proposed budget

The Network

Kansas has several special purpose networks that can be leveraged to create the KAN-ED network:

- KANS-A-N serves as the state's backbone network and provides voice, data, and video services for state agencies and Regents institutions.
- KANREN uses circuits within KANS-A-N to provide its 59 non-profit consortium members with network, training, and support services tailored to the needs of educational and research institutions.
- KANWIN, a subnet of KANS-A-N, provides the specific set of protocols necessary for remote access to some of the state's large information systems and the Internet.

- CJIS, another subnet of KANS-A-N, connects members of the criminal justice system.
- KICNET is the interlibrary information-sharing network.

KANS-A-N, the umbrella network for KANWIN and CJIS, has nodes in every Kansas county. In addition, there are several educational video networks each providing a cluster of schools with full-motion video for distance learning.

Recently, The University of Kansas joined North Dakota, South Dakota, Nebraska, Oklahoma, and Arkansas to develop the Great Plains Network, a high-speed communications backbone linking these six states and connecting them to Internet2. The National Science Foundation awarded start-up funds for this network, and the Kansas Technology Enterprise Corporation provided matching funds on behalf of the state.

Each of these networks meets important needs of its users. Unfortunately, KANS-A-N and KANREN networks are not fully meshed, and some public sector agencies are not connected at all. For example, many public schools and libraries in Kansas do not have network connectivity, or their level of connectivity is not adequate for the large volumes of data required for document exchange or interactive video. As a general rule, networks achieve their greatest value when they are connected to other networks, which enables any user on the network to connect to any other user on the network. The investment in infrastructure pays its largest dividends when this connectivity includes:

- access to the Internet
- technical standards to ensure compatibility among all points on the network
- training to ensure skilled use of the resource

Kansas can achieve these benefits and close the digital divide by connecting each school district, library, and education service center to the state backbone network.

These new network connections, called KAN-ED, would be an extension of the KANREN, CJIS, and KANWIN networks that reach into every Kansas county today. KAN-ED services would include:

- interactive video.
- discounted long distance.
- access to telemedicine, library, educational and government services.
- access to the Internet and the information and commercial resources available on it.

Technically, KAN-ED would include the following components:

- DS3 (45 Mbps) bandwidth to 12 model school districts for video.
- T1 (1.5 Mbps) bandwidth to 12 model school districts for Internet.
- T1 (1.5 Mbps) bandwidth to 292 school districts for Internet and data transmission.
- 6 DS3 (270 Mbps) bandwidth in the KANWIN backbone.
- Scaled bandwidth from 384 Kbps to T1 (1.5Mbps) for 326 libraries.
- SDN AT&T long distance service for all school districts.

With KAN-ED, Kansas will create a multi-service, high speed, scalable backbone network connecting all public agencies in the state, including schools, colleges, universities, and libraries.

KAN-ED Management

The State's Chief Information Technology Officer for the Executive Branch has overall responsibility for the integrated KANS-A-N network. KAN-ED, as an extension of KANS-A-N, will be part of the CITO's responsibilities. At the operational level, KANREN and DISC will partner to provide the actual KAN-ED network infrastructure. The Executive Director of KANREN will direct KAN-ED. DISC, through its Bureau of Telecommunications, will provide administrative services, engineering services, the Network Control Center, backbone circuits, and contract management. Service level agreements with the Kansas Department of Education will determine the exact relationship between DISC and KANREN.

Services

Training. The accelerated rate of change in information technologies often results in spectacular advances in functional capability. Recognizing the need to keep pace with the evolving technologies, KAN-ED includes a training component to help end users, teachers, students and local site technology managers achieve maximum benefit from the network and information resources accessible through it.

KAN-ED would provide training to help schools and libraries learn how to use, deploy, and support wide area and campus networks. Training would include direct services to educational service centers and cooperatives, as well as to the inter-locals. In addition, Kan-ED would sponsor conferences on network architecture, network usage, and related technologies. Training would be ongoing and would occur at two levels: 1) how to access and maintain the network, and 2) how to integrate technology as a learning tool.

Training on network access and maintenance would occur at strategic locations across the state. Through collaborations among the business and education sectors, networking academies and certification programs would train students for future technological jobs and build the capacity within local schools and libraries to maintain and troubleshoot local networks, equipment, and connections.

Training on integrating technology as a learning tool would build upon the Kansas State Department of Education's TAKE a STEP framework for combining face to face, video-based and web-based learning opportunities. KSDE developed this framework in collaboration with teachers, district technology leaders, higher education, industry, and a national regional technology consortium. By providing access to the vast resources available through the Internet and curricular materials developed within the state, KAN-ED would enable customized, demand-driven, just-in-time virtual training at any node on the network as the need arises.

Educational Content. The Internet is a vast encyclopedia of knowledge and information. Its content grows exponentially every day as more information is created, presented, and stored in electronic and digital formats. This content is multimedia, including text, image, video, and music. Just as the printing press expanded access to books and periodicals, the Internet is expanding access to information in all these electronic formats. Some of this information is free; some of it is available through subscriptions, licenses, or fees; and some of it will be generated within the state for local and shared use. Not providing this expanse of materials to schools and libraries is akin to removing all encyclopedias and most books, journals, videos and recordings from their shelves.

As the state realizes the opportunity to leverage resources, the content and benefits of the expanded network will become a vital and integral part of day-to-day operations in schools, libraries, and state agencies. The diagram included as an attachment to this proposal reflects the infrastructure that would provide these services statewide.

Infrastructure Management. An important benefit of the management structure is the ability to aggregate the demand for information technology assets and services. By combining the network, equipment and software purchases of individual schools and libraries, it is often possible to achieve the critical mass necessary to negotiate lower unit costs with commercial providers of these goods and services. Collaboration can make the infrastructure more affordable as well as easier to maintain and operate by creating de facto standards through bulk purchasing. Training becomes easier and the new skills acquired are more easily transferred

from site to site. In some cases, aggregation can stimulate vendors to enhance their infrastructure to meet the increased demand. This can be especially important in sparsely populated regions of the state for reasons discussed above. Finally, the ability to aggregate the demand for information technology and services may lead to coordinated requests for appropriations and help ensure a more effective, non-duplicative use of funds.

Implementation Plan and Budget

KAN-ED would provide Internet access and video service from the state backbone network to 304 school districts, 330 libraries, and 28 education service centers in the state. School districts would have access to help desk consultation and training as described above. Libraries would offer electronic publication and database services to their clients. In addition, libraries would reduce their long distance communications costs by joining the state system and state of the art high bandwidth technology for applications such as video services to 25 school districts and 20 libraries for research and development. The total investment to implement KAN-ED in the first year would be $17.5 million, including $4.5 million in one-time costs and $13 in recurring costs.

Estimated Costs
KAN-ED Network
In Millions

	Site Count	One Time $	Annual Recurring $
Education			
District Internet Access	304	$1.8	$2.1
Video (DS3) Full Motion	25	1.1	1.6
Service Centers	28	0.2	0.2
Help Desk & Training		0.0	1.6
Backbone Network		0.1	1.4
Total Education	357	$3.2	$6.9
Libraries			
Internet Access	330	$0.4	$2.3
Video (DS1)	20	0.8	1.0
Shared Publication Services		0.0	1.0
Backbone Network		0.1	1.4
Long Distance		0.0	0.4
Total Libraries	356	$1.3	$6.1
Total for KAN-ED	713	$4.5	$13.0

2-12

Funding Recommendation

KAN-ED will need a stable source of funding each year to remain in operation. It is therefore recommended that KAN-ED be funded from the state general fund. There are other potential funding sources such as E-Rate, Kansas Universal Service Fund, grant programs, and partnerships with service providers that can augment the state general funds, but these sources are not reliable from year to year. Local school districts will provide matching funds by continuing to budget for technology infrastructure within their school district.

Significant potential savings are possible through leveraging and aggregate purchasing. Opportunities include:

- Lowered unit costs for the network, equipment, software and training.
- More cost effective infrastructure maintenance and enhancement.
- Consolidated network operations.
- More efficient network operation and use through training.

At this time it is impossible to estimate these cost savings until the network is implemented.

References

[1] Remarks by Chief of Staff John Podesta on Research and Development Funding, National Press Club, September 1, 1999.

[2] U.S. Department of Commerce, June 1999.

[3] *Kansas Innovation Index*, KTEC, 1999.

[4] Beth Stackpole, Next Internet, *Civic.com*, September 1999.

[5] http://www.more.net/

[6] http://www.wa.gov/k20/

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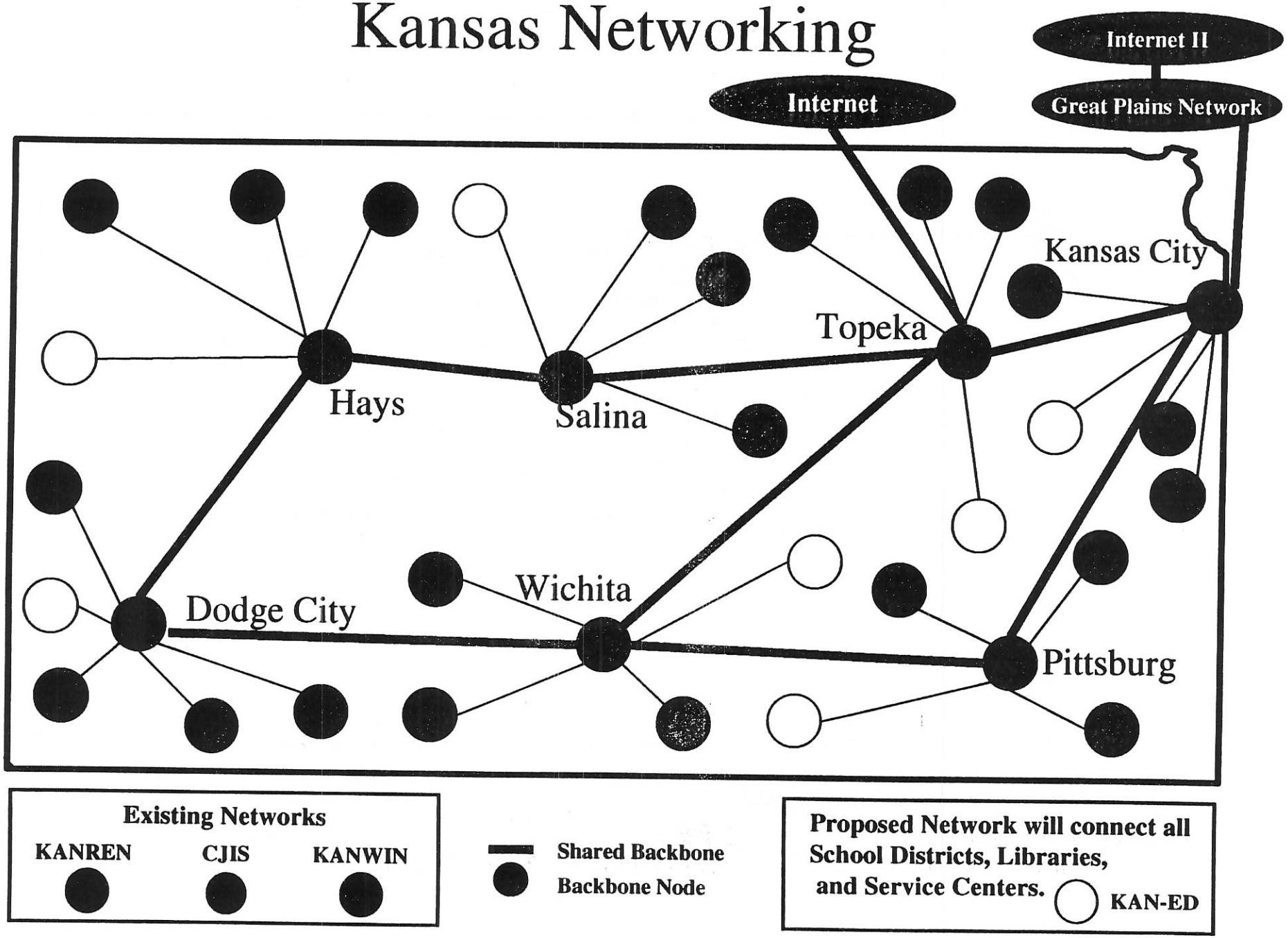
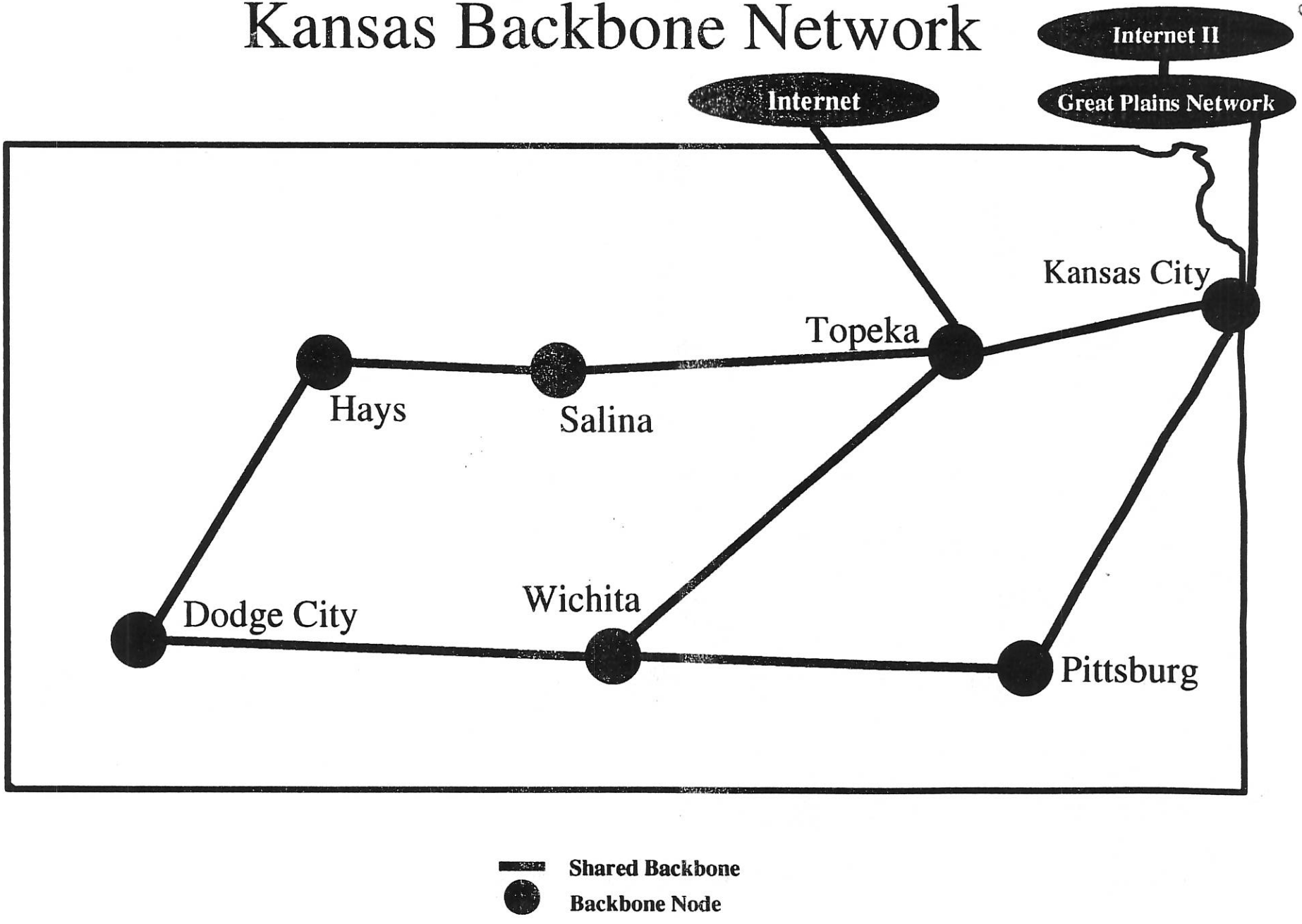
Kansas Networking



Kansas Backbone Network



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April 4, 2000

To: Senate Committee on Ways and Means

From: Lynne Holt, Principal Analyst

Re: KAN-ED and Substitute for HB 2591, as Amended by the House Committee

Sub. for HB 2591 is the product of an interim study of the Special Committee on Education. The major stimulus for the proposed KAN-ED network was the inequity of monthly rates paid by school districts for Internet access throughout the state. The Division of Information Systems and Communications (DISC) would manage the network, aggregate demand, and average Internet connectivity rates, thus reducing costs to school districts in remote areas.

Policy Questions and Responses

1. What is KAN-ED?

KAN-ED is a state education technology-based network. It is analogous to a highway system. The network is not an application in itself but provides sufficient capacity to enable certain applications to occur. Just as a good highway system can accommodate large volumes of traffic at high speeds, a well designed information technology network can transmit large volumes of data at high speeds. KAN-ED, through primarily leased network components, would be expanded in terms of capacity or speed capability, as well as the number of connections, to meet increased demand. KAN-ED would be authorized to use whatever technology is most appropriate for any interconnection and reconfiguration needed to meet increased demand. For example, if a future technology emerges, the network could incorporate it (p. 1, l. 31-34)*.

2. Which Entities Could be Served by KAN-ED?

304 school districts in Kansas (enrollment is 469,850)
28 education service centers

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* All references to pages, lines, and sections refer to Sub. for HB 2591, as amended by House Committee.

Senate Ways and Means Committee
Date April 5, 2000
Attachment # 3

330 public libraries
143 accredited private schools (enrollment is 30,852)

Home schooled students are not included in Sub. for HB 2591. None of the entities listed above is required to connect to the KAN-ED network. Moreover, nothing precludes private-sector providers from furnishing Internet connectivity, distance learning capability, and technology integration services to school districts and libraries (p. 1, l. 35-37).

3. What are Possible Applications of KAN-ED?

To use the highway analogy, we want a good highway system so that we can get to our destination as easily and quickly as possible. The purpose is to arrive at our destination. The purposes or applications of KAN-ED (p. 1, l. 15-18) include: Internet connectivity with a minimum speed of 128 kilobits per second; distance learning capability (full motion interactive video), and integration of technology into the curriculum. Through KAN-ED, other services will be provided:

- Statewide access to state agency electronic databases;
- Aggregated subscriptions to online periodicals;
- Development of curricular materials for local as well as statewide use;
- Shared instruction in areas of certified personnel shortages;
- Increased opportunities for teacher in-service training;
- Access to enrichment materials through government agencies, such as NASA and the Library of Congress;
- Access to very sophisticated software products that reside on the state mainframe; and
- Receipt of training on the use of new technologies, software products, and bandwidth.

4. How will KAN-ED be Managed?

KAN-ED will be managed in much the same way as the other networks, such as KANS-A-N (voice) and KAN-WIN (data), are managed by DISC. DISC will not own the network but will lease network circuits and facilities to meet demand (see p. 2, l. 13-15). DISC will provide network support (problem diagnosis and assistance) for KAN-ED services through its Network Control Center in the Landon State Office Building. This Center

operates 24 hours a day, seven days a week. Certain modifications may need to be made to monitor a network of this scale.

5. What Procedures will be Used for Obtaining KAN-ED Services?

In accordance with KSA 75-7209, all state agencies must submit information technology project plans to DISC (defined in KSA 75-7201 as a project for a major computer, telecommunications, or other information technology improvement with an estimated cumulative cost of $250,000 or more.) Sub. for HB 2591 is using the same oversight and approval procedure for the information technology project plan to be submitted jointly by the Department of Education and the State Library for KAN-ED (Section 2(a-b)), as would be applied to any other state agency's plan. The Department of Education and State Library will first assess the school districts' and public libraries' demands for KAN-ED services and then submit the information technology project plan. The plan must be included in a project budget estimate. The plan must address:

- A detailed description and justification of the project;
- A description of the tasks and schedule necessary to meet those demands;
- A financial plan; and
- A cost-benefit statement.

After the Commissioner of Education and the State Librarian approve the plan internally, it must be submitted to the Chief Information Technology Officer (in this case, the Director of DISC) for his approval. The Director of DISC will then contract out for network components needed to implement the Department of Education's and State Library's joint plan.

6. How will Contracts Between DISC and Vendors be Handled?

All contracts for KAN-ED telecommunications services would be subject to KSA 75-4701 *et seq.* These statutes include provisions that relate to contracts by state agencies for information processing services and equipment (p. 3, l. 17-22). Proposals for KAN-ED services may be submitted by all types of telecommunications providers. (The definition of "telecommunications services" in KSA 75-4710 is very broad and applies to voice, data, and video transmission services.) The information technology project plan for KAN-ED may not impair any existing contract for telecommunications service in a participating school district or library (p. 2, l. 8-13). The implication is that a plan that does propose to abrogate a contract could not be approved by DISC. If school districts and libraries with existing contracts for Internet connectivity elect to be connected to

KAN-ED, they could still have access to Internet 2 (discussed below) and specialized educational content not available on the commercial Internet.

7. What is KANREN and What is its Role in KAN-ED?

The Kansas Research Education Network (KANREN) provides high-speed Internet service, consulting, network monitoring and diagnostics, and training and technical support to its 69 nonprofit consortium members consisting of all the Regents institutions and the KU Medical Center, most of the community colleges, and several school districts, public libraries, and other education and research-based institutions. DISC intends to enter into a service level agreement with KANREN to provide staff inservice training and technical support to schools and libraries participating in the KAN-ED network.

In addition, through KANREN, schools and libraries participating in the KAN-ED network should have access to Internet 2. KANREN's backbone connects to the Great Plains Network (GPN). GPN is a multi-state regional network that supplies interstate connectivity, commercial Internet access, and access to Internet 2 (see No. 8). In Kansas, the University of Kansas (including the KU Medical Center in Kansas City) and Kansas State University are members of the Internet 2 consortium. The intent is to connect KANREN and DISC's data network (KANWIN) through a high-speed link and modify DISC's backbone to handle anticipated increased data traffic. This is analogous to expanding roads to accommodate increased vehicular traffic.

8. What is Internet 2 and Why is it Important?

Internet 2 is a research-oriented, high performance network that was developed by the University Corporation of Advanced Internet Development (UCAID) in partnership with Qwest, Nortel, and Cisco. Primary participants are research universities, such as the University of Kansas and Kansas State University, but K-12 institutions may connect indirectly to the Internet 2 network, provided that Internet 2 traffic is kept separate from commercial Internet traffic. Internet 2 has the bandwidth capacity to operate at very high speeds. It is being used to research and develop new applications and computer hardware. An example for its relevance for K-12 schools might be new applications using full motion interactive video.

9. How will KAN-ED be Funded?

Sub. for HB 2591 provides no appropriations for KAN-ED. The bill establishes two KAN-ED funds—one to be administered by the State Board of Education and one to be administered by the State Library. Into the funds would be credited any public or private moneys for services included in the information technology project plan. Expenditures from both funds would be subject to appropriations. (See Sections 3-4.)

The KAN-ED proposal includes $4.5 million for start-up costs and $13 million per year to operate KAN-ED. Funding will be used for connecting school districts and libraries to the state backbone. The start-up costs include installation of circuits and lines at 304 school district sites and 330 library sites. They also include the installation of expanded bandwidth and gateways to Internet 1 and 2. Generally, school districts will be connected at T1 speeds (1.5 megabits). The KAN-ED proposal also calls for connecting 25 school districts with DS3 speeds (45 megabits). School districts will be responsible for connecting their buildings; this is not part of KAN-ED's responsibility. Libraries would be connected to the backbone at speeds ranging from 128 kilobits per second to T1. (This is why the minimum speed of 128 kilobits per second is referenced on p. 1, l. 17.) KAN-ED funding for discounted long distance telephone service may only be used if such service is part of a distance learning activity (p. 1, l. 25-27). State appropriations may be leveraged through federal E-Rate discounts (see No. 10) and private sources. The language in Section 8 of the bill authorizes the Kansas Technology Enterprise Corporation to establish nonprofit organizations to accept charitable tax-exempt contributions for KAN-ED purposes. Funding from such sources may reduce the need for future appropriations, particularly with respect to content development.

According to a legal opinion requested by the Director of DISC, accredited private schools can legally be connected to KAN-ED, provided that the connection is not financed by the state. Therefore, any state appropriations would not be used to fund connectivity to accredited private schools.

10. How will E-Rate Discounts be Used for KAN-ED?

The E-Rate program is administered by the Schools and Libraries Division of the Universal Service Administration Company (USAC) under the Federal Communications Commission. E-Rate discounts can be applied to telecommunications services, Internet access, and internal connections. In mid-January, the Department of Education and the State Library filed applications to the USAC for E-Rate discount consideration. Both parties filed as consortia. The consortia intend to contract with DISC as the Internet Service Provider (Internet 1 and 2). The E-rate discount is estimated at 62 percent (the average of all school districts and libraries). If the Legislature appropriates $4.5 million (the amount recommended by the Governor and the Senate) and if USAC approves the consortiums' applications, DISC projects the appropriation will leverage an additional $9.2 million. The E-Rate discount of $9.2 million is based on projected expenditures of $14.8 million for installation and ongoing connectivity services. (DISC will furnish more information on this projection, upon request.)

Senate Ways and Means Committee

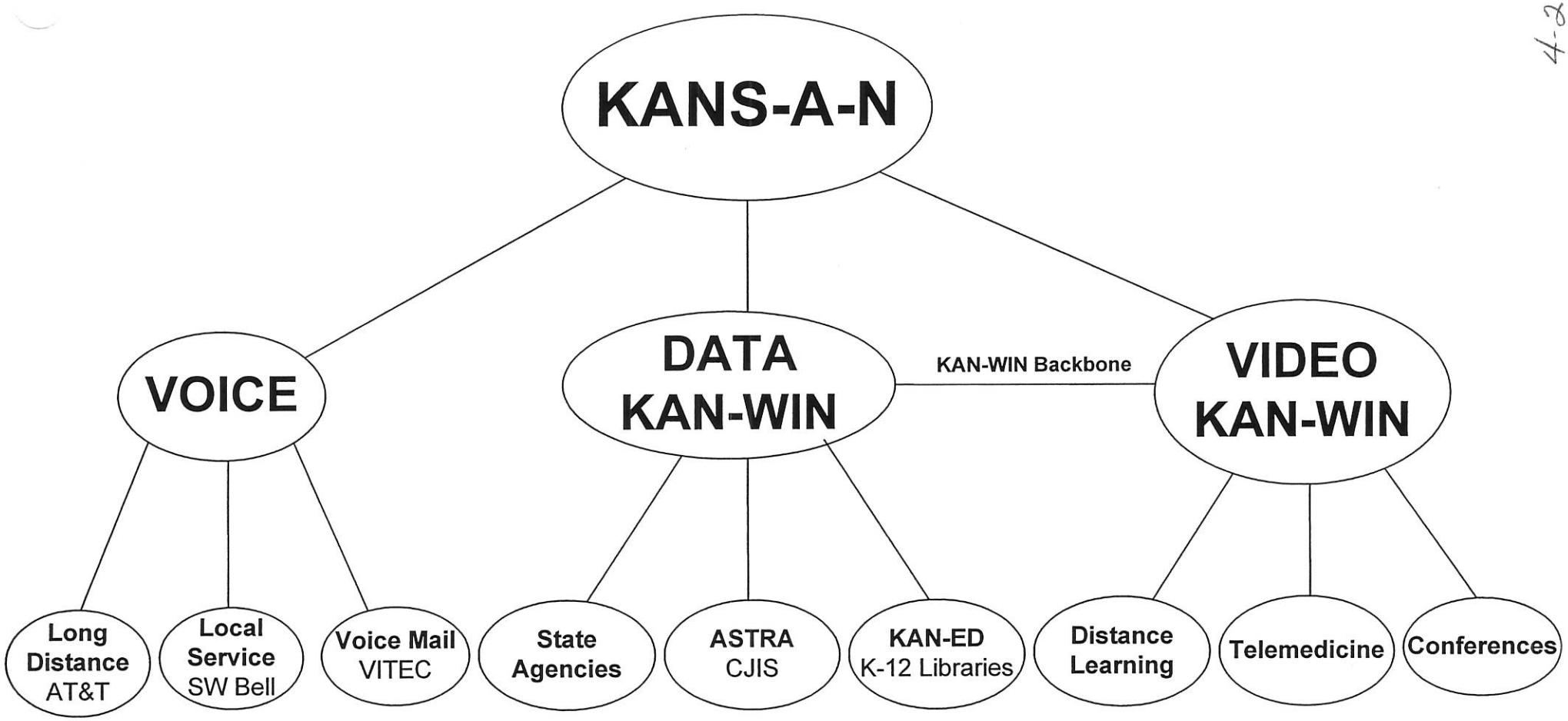
KAN-ED Technologies

April 5, 2000

Presented by Don Heiman,
Chief Information Technology Officer
Executive Branch

The State Network Serves Many Communities

4-2



- Backbone covers all counties and major cities in Kansas
- Serves 18,000 users in our state agencies
- The backbone is fault-tolerant and self-healing should an outage occur
- All transmission facilities are bid and leased from industry

DISC Bids Network Services

Voice Contracts

AT&T: Software defined network. Public network leased by DISC from bids. Next bid is January 2001.

SW Bell: Local phone services. Bid was awarded February 2000 for Topeka based agencies.

VITEC: Voice mail server operated by DISC, under maintenance with VITEC.

Data Connects

AT&T: Public backbone (used for video as well).

Local Exchange Carriers: T1 1.5 megabit legs based on tariffs.

Video Connects

AT&T: Public backbone (used for data as well).

AT&T: Video access circuits to backbone.

Norstan: CODEC (used for inter-active video) provider.

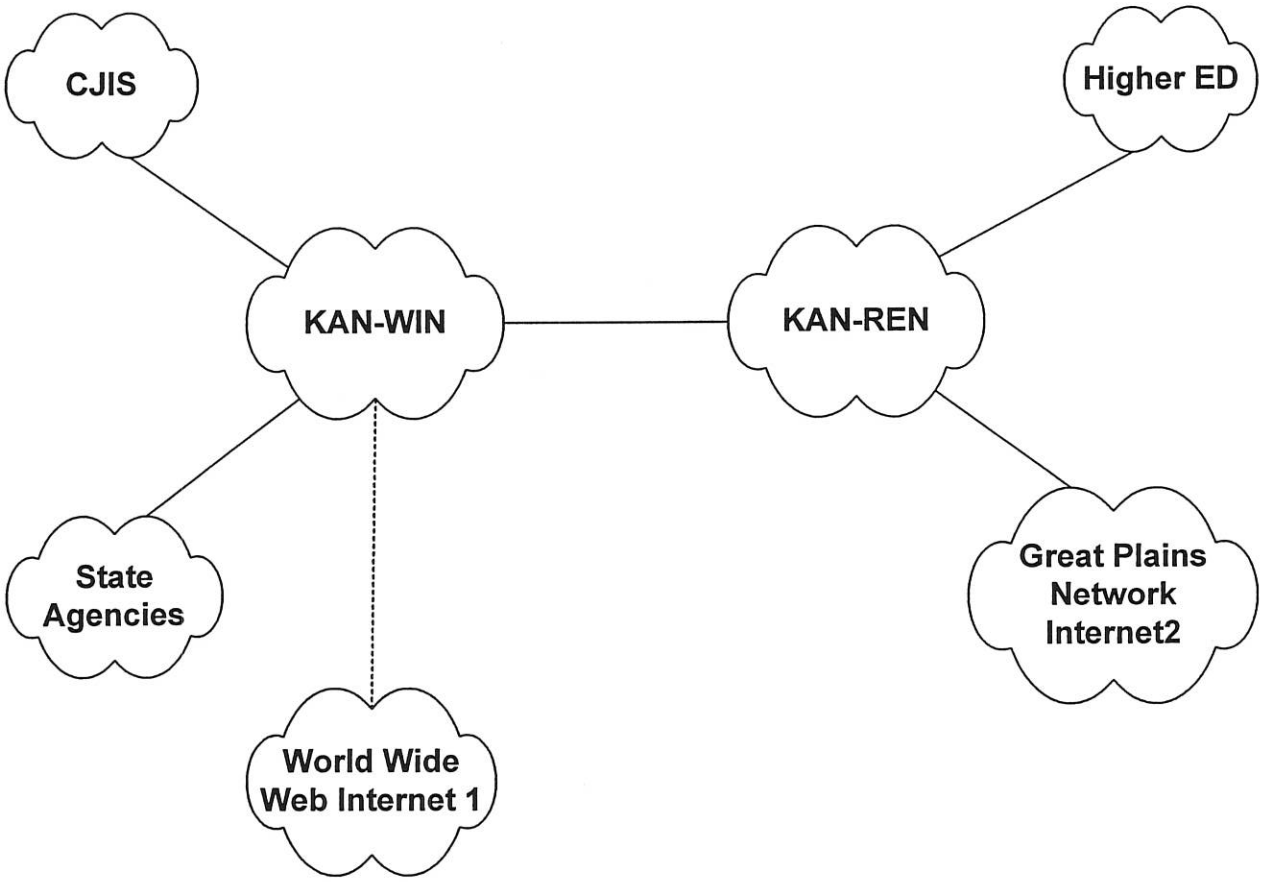
DISC leases all transmission Services

DISC manages the network through a 24X7 Network Control Center (NCC).

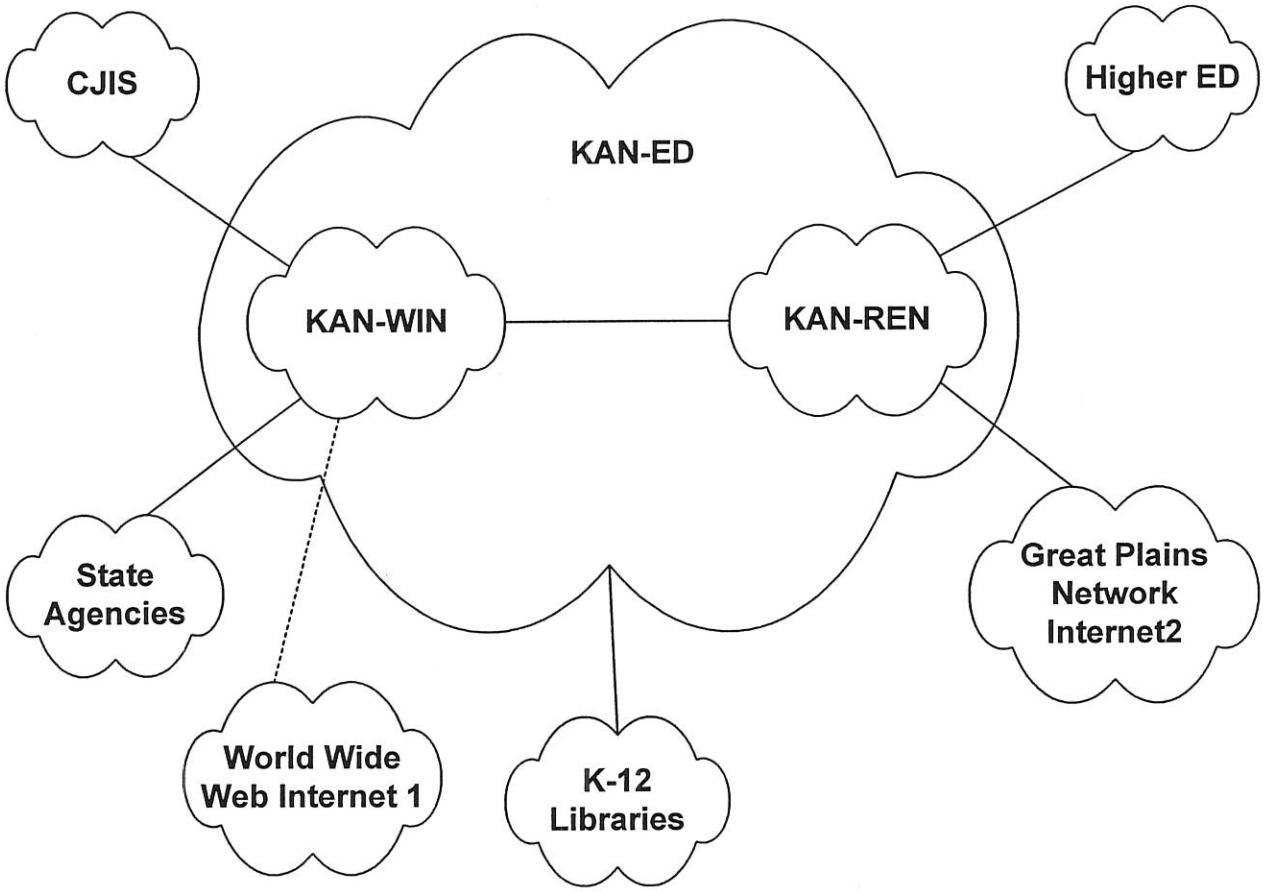
DISC bids routers & arranges for Installation.

Router maintenance is out-sourced

KAN-WIN is like an Intranet



KAN-WIN is like an Intranet



4-6

KAN-ED is like an Intranet

- Intranet data not published to Internet 1, available through Internet2
- High speed backbone rented from industry (network is bid)
- Circuits from local exchange carriers with pricing based on tariffs
- Scalable network. Price protected in our contracts
- Fully managed by DISC
- Performance contracts with vendors

KAN-ED Leverages:

- Industry and state IT assets already in place
- Millions of dollars in IT infrastructure, software and Databases for use by the K-12 and library communities

DISC Services

Industry owns the network,
DISC rents and manages the network.

DISC:

- Arranges industry contracts for compliance and performance terms
- Audits all bills
- Rate re-balances charges from vendors and bills agencies average price
- Aggregates demand for services. DISC is the buyer, DISC is not the provider
- Operates a 24X7 switchboard. Operators available to help citizens find phone numbers or help agencies arrange video and voice conferences
- Operates and manages the Network Control Center (NCC) that is in service 24 hours a day, seven days a week including;
  - -single point of contact for outages
  - -works with industry for repair of outages
  - -remote diagnostic services

KAN-ED Uses

- **Remote Distance Learning: i.e. Share a Japanese class in Johnson County with a class in Atwood Kansas using interactive video on the state Backbone**

- **Internet2: i.e. Access scientific journals from Iowa State University library or search an educational curriculum data base at Illinois University on the KAN-REN/Great Plains Network Backbone**

- **Internet 1: i.e. Go to the World Wide Web through the DISC backbone and access catalogs at the library of Congress**

- **State Assets: i.e. Access the State Geographic Information System to locate aquifers in Kansas, overlay maps, or display data using the ArcInfo Software. Use the state's Oracle data base software to build a relational file in class or use SAS software to do a statistical routine such as a multiple correlation or a test of significance.**

KAN-ED uses (continued)

- Library assets: i.e. Searching online all libraries in Kansas for a holding and order the holding online. Provide training for adults on how to use the Internet or principles of computing.

- Educational testing: i.e. Use KAN-ED to consolidate QPA tests, grading and evaluations instead of sending paper forms or floppy disks in the mail.

- KAN-ED connects all subscribers to Internet2 as well as to Internet 1. It is truly electronic democracy for K through 80 learners.

KAN-ED glossary of terms:

- **Backbone:** the state's primary telecommunications infrastructure that supports KANS-A-N (see below), KANWIN (see below) and other state based networks. The backbone network is in all counties and major cities in Kansas. The bandwidth is leased based on bids from the industry.

- **Content of KAN-ED:**
  1. statewide access to electronic databases
  2. subscriptions to online periodicals
  3. access to enrichment materials from such providers as NASA and the Library of Congress and others
  4. access to informal sciences, arts and educational materials through museums
  5. communication opportunities among students, schools and parents
  6. opportunities for teacher in-service training
  7. shared instructors in areas of certified personnel shortages
  8. development of curricular materials for local and statewide usage

- **Division of Information Systems and Communications(DISC) :** DISC manages the telecommunications infrastructure backbone for state government. DISC has a presence in each of the 105 counties in Kansas. DISC provides technology services and products to each law enforcement agency in the state and interactive video for medical and surgical procedures for KU Med. DISC provides services and products to the Regents university system. DISC operates and manages the state data-center providing computing services to state agencies and local units through multi computer platforms including; mainframe/MVS, AS/400 and Sun technology. In addition, DISC provides network support for all DISC services and products through the Network Control Center (NCC) 24 hours a day, seven days a week.

- **E-Rate:** The Telecommunications Act of 1996 provided for "Educational Rate" or E-rate. E-rate is managed by the School and Libraries Division (SLD) of the Universal Service Fund (USF). The federal over-site of the USF/SLD is the Federal Communications Commission. E-Rate provides all public and private schools and libraries access to telecommunications services and technology products at a discount. The discount is based on the number of students eligible for the national free lunch program in each respective school district. Discounts range from 20%-90%. Services that are E-rate discount allowable are telecom services, Internet access and internal connections.

- **Internet:** The Internet is the largest computer network in the world. The Internet exists over countless aggregated computer networks around the globe. The content of the Internet is derived from text and graphics published for use on the Internet and other documents configured especially for the Internet. The Internet is available to individuals and commercial entities alike.

KAN-ED glossary of terms

- **Intranet:** A private network for the exclusive use of only those who are members. The intranet is not accessible from the outside world. The DISC KANS-A-N (KANWIN) network behaves like an intranet. The same is true for the Regent's KANREN network.

- **Internet2:** A project of the University Corporation for Advanced Internet Development. Internet2 in its beginnings was a network for the exclusive use of member universities. As such, Internet2 was designed as a closed or private network for use by its members and by definition an "intranet". The content of Internet2 is specialized for educational purposes. Some of the content of Internet2 is materials for educational research and specialized data-bases for the educational community. Internet2 users typically use broader bandwidths for connectivity. Internet2 members advocate leading edge technology for delivery and reception of the service.

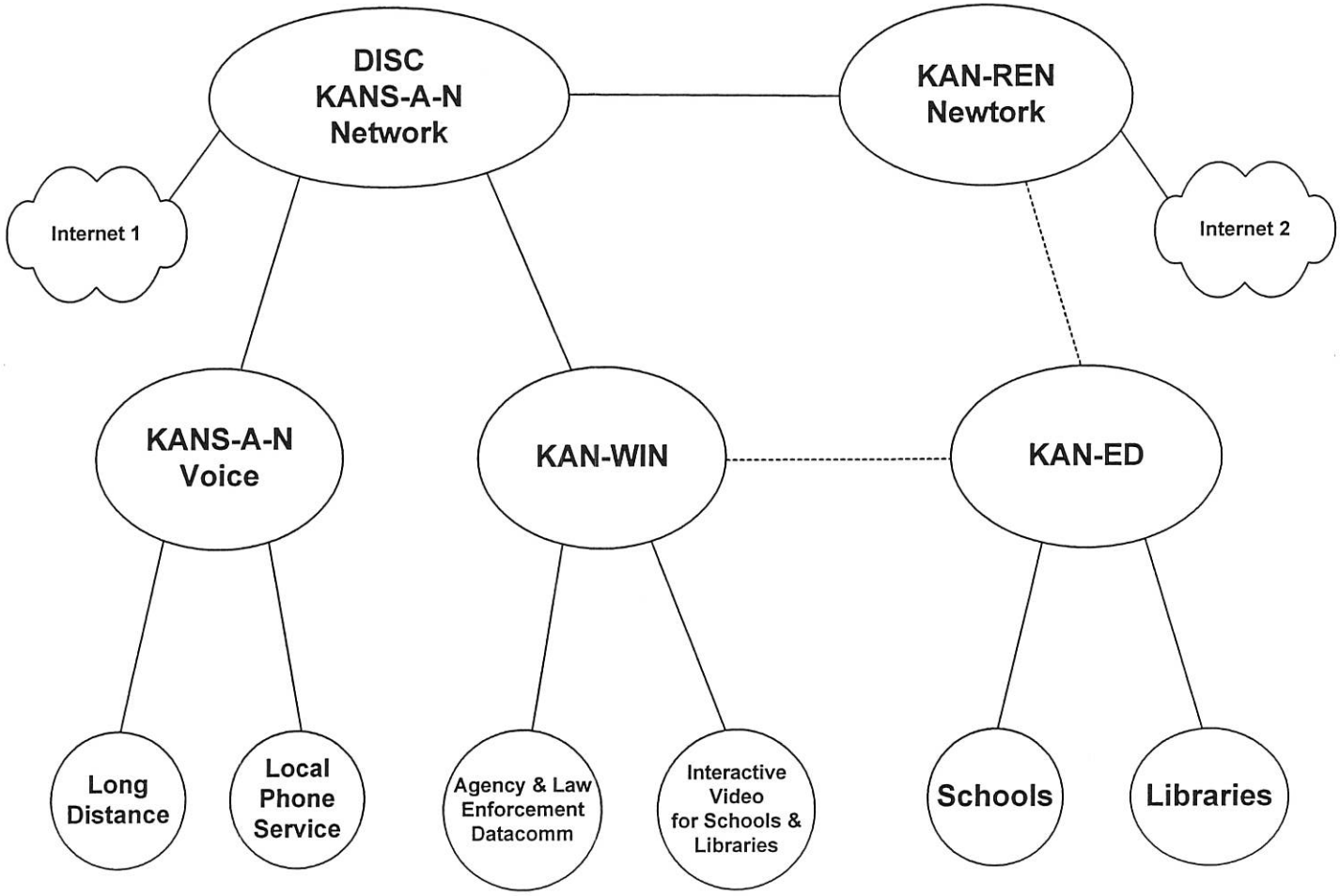
- **KANS-A-N:** Kansas Agency Network, serves most of Kansas state government with voice, data and video connectivity. DISC manages this network. The network has two sub-networks: KANS-A-N for voice and KANWIN for data.

- **KANREN:** Kansas Research and Educational Network, available to higher education entities in Kansas and some K-12 institutions. A consortia of Universities in Kansas manage this network.

- **KANWIN:** Kansas Wide Area Information Network, a sub-network of KANS-A-N, serves most of Kansas state government with data and video connections that share the same backbone.

A complete diagram of the networks are on the following page.

KAN-WIN is Like an Intranet

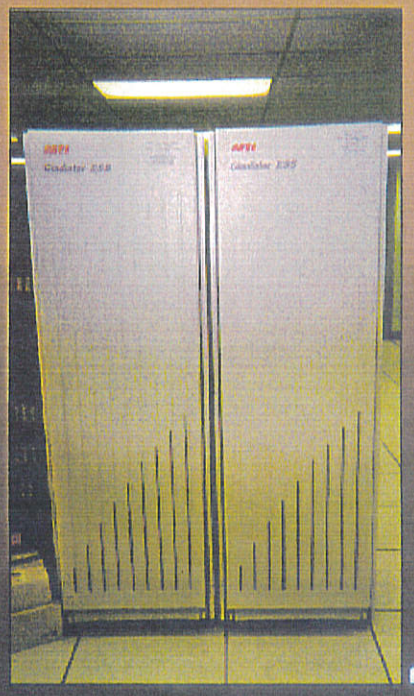


Department Of Administration
DISC
Resources Available to KAN-ED

Mainframe

Mid-Range

Open Systems



Data Center Physical Characteristics

Space

The data center is located in the Landon State Office Building and encompasses 15,387 square feet of raised floor area. The raised floor is for cabling, air flow to machinery, and alarm systems.

Environment

23 Air Handling Units

300 Ton Capacity

3,000,000 BTU/HR. Capacity

68-72 Degrees

Electrical/Backup Power

Power is supplied by UPS (Uninterruptable Power Supply) into 20 PDU's (Power Distribution Units) that distribute power to all the various devices on each floor. In case of sudden power losses, a battery system allows approximately 30 minutes to restore regular power, or to transition to diesel generators if necessary.

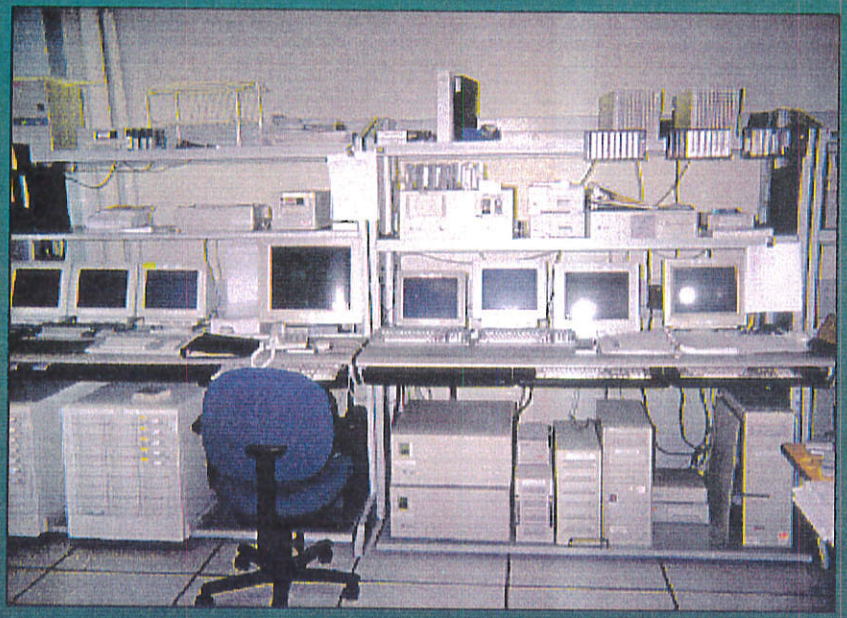
Security/Fire

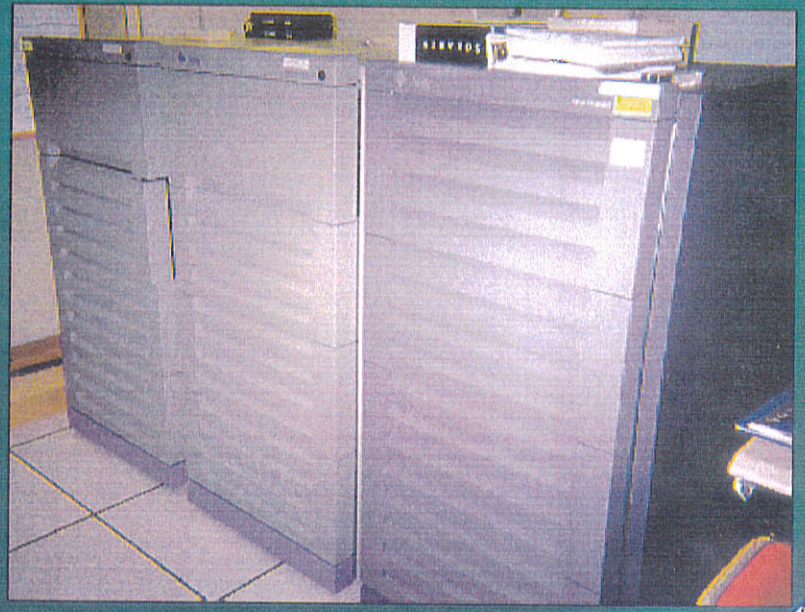
Data Center access is controlled by the Honeywell Alpha 100 Computer Security System and monitored by the Capitol Complex Security Patrol. Fire, smoke and water detection is monitored by detectors in the ceilings, at floor level, and under the floor.

Mainframe Disk Drives and Tapes Drives

Disk Drives	***Vendor***	***Storage***		
(4) 9210	STK	1.2 Terabyte Physical Space		
Tape Drives	***Vendor***	***Density***	***Track***	***Capacity***
(26) 4480 Cartridge (Silo Attached)	STK	38,000 Bpi	18	541 Ft
(16) 3480 Cartridge	IBM	38,000 Bpi	18	541 Ft
(2) 9490 Ext Cart (Silo Attached)	STK	38,000 Bpi	36	1089 Ft
(7) 4554 Reel	STK	1600/6250 Bpi	9	
(2) 9309 Reel	IBM	1600/6250 Bpi	9	
(1) Cartridge Drive	IBM	2.5 Gb		1200 Ft

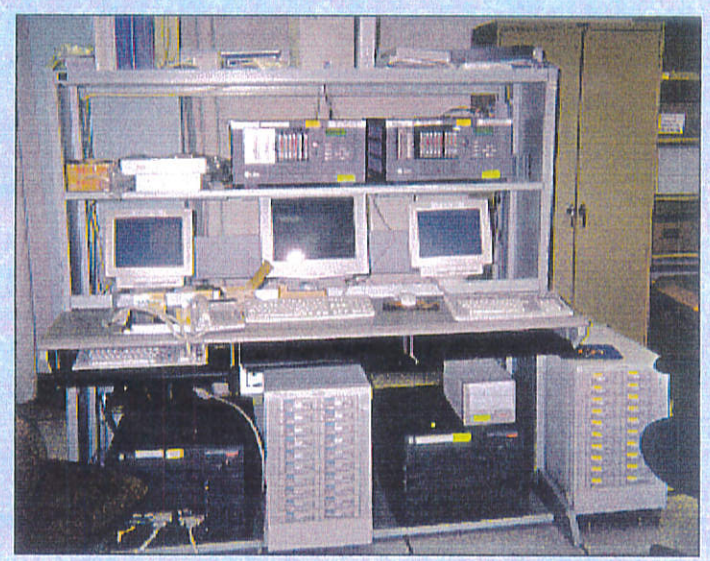
Open Systems





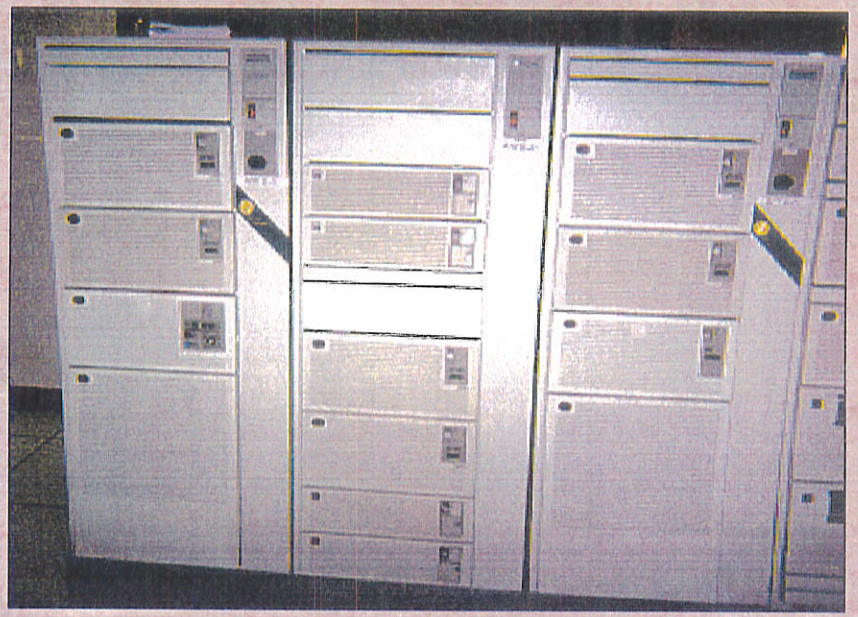
Open Systems Environment

Open Systems range from Intel Pentium personal computers with 128 Mg of memory, to Sun 4000 units with 6 Gg of memory and 8 CPU's. The open systems tape library ranges from 4 mm tapes that are 295 feet long, holding 2 Gg of data uncompressed, to DLT tapes that are 1828 feet long and are capable of holding up to 70 Gg of data compressed. The Data Center's Open Systems area services 12 systems, that in turn service multiple state agencies.



Mid-Range

The IBM AS400 is the Data Centers resident mid-range system. The AS400 contains 500 Mg of storage capacity mirrored, for 1 Gg of total storage, and is primarily used for printing functions and smaller applications.



Print Shop

Printers

(2) DP96MX Xerox Laser Printers

(3) IBM Band Printers

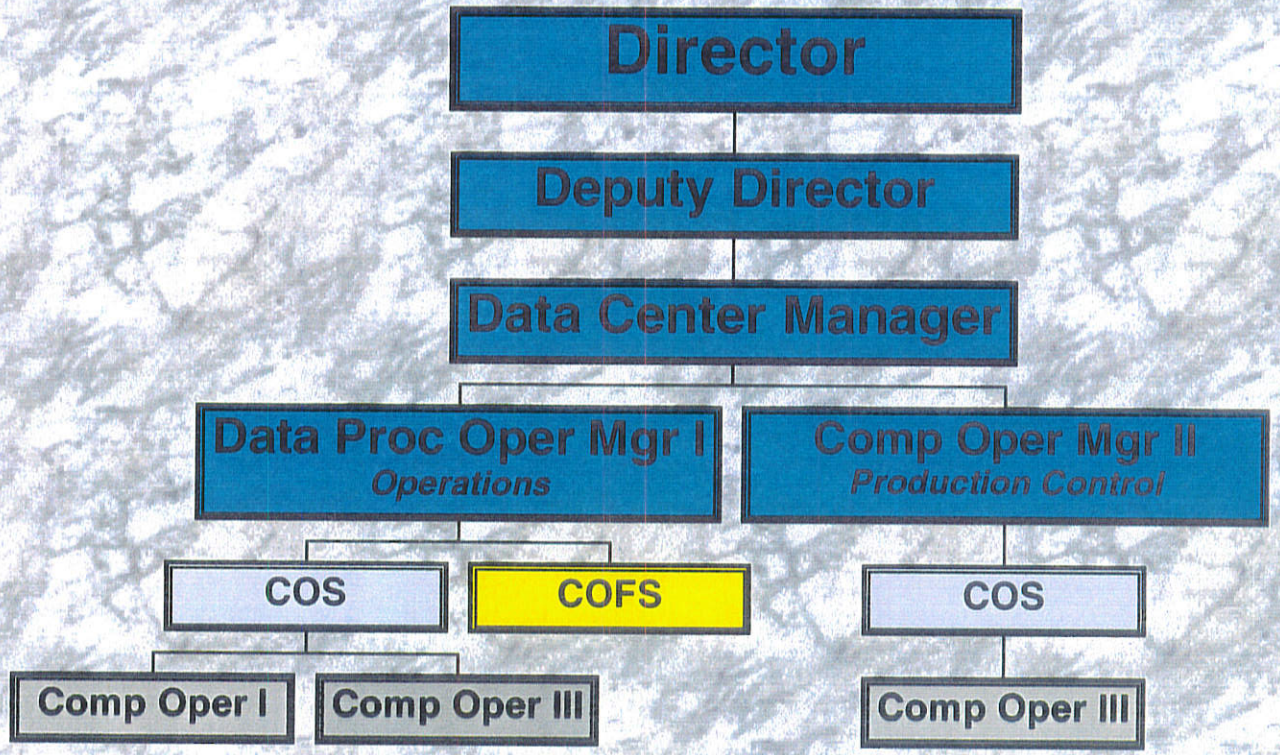
Post Processing Equipment

(2) Moore Pressure Folder/Sealers

Average Monthly Output

The print shop produces all SHARP, STARS, Income Tax and SRS warrants (checks) for the entire State of Kansas. The SHARP system produces warrants and electronic fund transfer documents (EFT's). The monthly average output of laser printers is approximately 500,000 images. Monthly averages on band printers, which print continuously fed forms varies greatly, and can be anywhere from 105,000 to 175,000 sheets.

Data Center Staffing Information



COFS - Computer Operations Facilities Specialist

COS - Computer Operations Supervisor

The Data Center operates 24 hours a day, 7 days per week, 365 days per year and currently serves multiple State agencies. Our standards and quality of excellence are unsurpassed. Calling for assistance from any one of our capable staff will result in professional, timely, and courteous service. Thank you for your interest in the Data Center!

KAN-ED glossary of terms:

- **Backbone:** the state's primary telecommunications infrastructure that supports KANS-A-N (see below), KANWIN (see below) and other state based networks. The backbone network is in all counties and major cities in Kansas. The bandwidth is leased based on bids from the industry.

- **Content of KAN-ED:**
  1. statewide access to electronic databases
  2. subscriptions to online periodicals
  3. access to enrichment materials from such providers as NASA and the Library of Congress and others
  4. access to informal sciences, arts and educational materials through museums
  5. communication opportunities among students, schools and parents
  6. opportunities for teacher in-service training
  7. shared instructors in areas of certified personnel shortages
  8. development of curricular materials for local and statewide usage

- **Division of Information Systems and Communications(DISC) :** DISC manages the telecommunications infrastructure backbone for state government. DISC has a presence in each of the 105 counties in Kansas. DISC provides technology services and products to each law enforcement agency in the state and interactive video for medical and surgical procedures for KU Med. DISC provides services and products to the Regents university system. DISC operates and manages the state data-center providing computing services to state agencies and local units through multi computer platforms including; mainframe/MVS, AS/400 and Sun technology. In addition, DISC provides network support for all DISC services and products through the Network Control Center (NCC) 24 hours a day, seven days a week.

- **E-Rate:** The Telecommunications Act of 1996 provided for "Educational Rate" or E-rate. E-rate is managed by the School and Libraries Division (SLD) of the Universal Service Fund (USF). The federal over-site of the USF/SLD is the Federal Communications Commission. E-Rate provides all public and private schools and libraries access to telecommunications services and technology products at a discount. The discount is based on the number of students eligible for the national free lunch program in each respective school district. Discounts range from 20%-90%. Services that are E-rate discount allowable are telecom services, Internet access and internal connections.

- **Internet:** The Internet is the largest computer network in the world. The Internet exists over countless aggregated computer networks around the globe. The content of the Internet is derived from text and graphics published for use on the Internet and other documents configured especially for the Internet. The Internet is available to individuals and commercial entities alike.

Senate Ways and Means Committee
Date April 5, 2000
Attachment # 5

KAN-ED glossary of terms

- **Intranet:** A private network for the exclusive use of only those who are members. The intranet is not accessible from the outside world. The DISC KANS-A-N (KANWIN) network behaves like an intranet. The same is true for the Regent's KANREN network.

- **Internet2:** A project of the University Corporation for Advanced Internet Development. Internet2 in its beginnings was a network for the exclusive use of member universities. As such, Internet2 was designed as a closed or private network for use by its members and by definition an "intranet". The content of Internet2 is specialized for educational purposes. Some of the content of Internet2 is materials for educational research and specialized data-bases for the educational community. Internet2 users typically use broader bandwidths for connectivity. Internet2 members advocate leading edge technology for delivery and reception of the service.

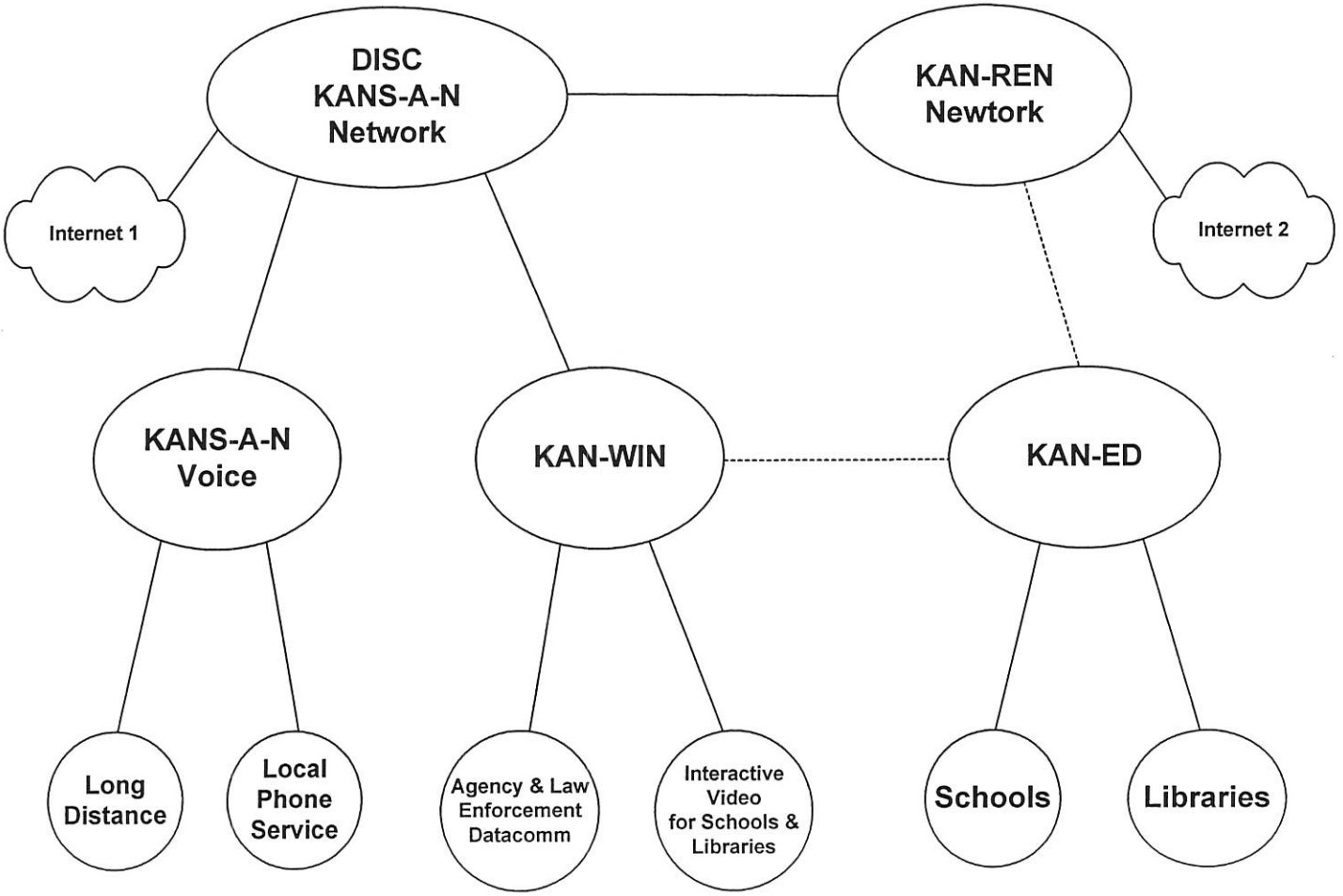
- **KANS-A-N:** Kansas Agency Network, serves most of Kansas state government with voice, data and video connectivity. DISC manages this network. The network has two sub-networks: KANS-A-N for voice and KANWIN for data.

- **KANREN:** Kansas Research and Educational Network, available to higher education entities in Kansas and some K-12 institutions. A consortia of Universities in Kansas manage this network.

- **KANWIN:** Kansas Wide Area Information Network, a sub-network of KANS-A-N, serves most of Kansas state government with data and video connections that share the same backbone.

A complete diagram of the networks are on the following page.

KAN-WIN is Like an Intranet



KAN-ED Cost Breakdown

1. Total costs of installation and year 1 operation:	$17.5 million
Minus Savings:	
a. From bidding the network & components	$ 2.0 million
b. From installation	.7 million
Savings total:	$ 2.7 million
2. Total costs minus the savings:	$14.8 million
Savings from E-rate discounts:	$ 9.2 million
3. Costs (#2)minus E-rate savings:	$ 5.6 million
Minus appropriation:	$ 4.5 million
4. Amount to be funded from private sources:	*$ 1.1 million*

KAN-ED
Connecting Kansas Schools

Greg Rasmussen
Coordinator of Educational Technology
Kansas State Dept. of Education
grasmussen@ksbe.state.ks.us

The Need

- Dr. Tompkins calls together a task force in the Spring of 1998.
  - Inequity - "Bandwidth" and "Cost"
  - Necessity - Maintain Kansas' outstanding national reputation and competitive advantage
  - Leverage existing resources
  - Lack of technology expertise
  - Limitations of current systems
  - Potential growth for the future

Senate Ways and Means Committee
Date April 5, 2000
Attachment # 7

Some Quick Numbers

- Kansas ranks #1 in the country in computers per student Technology Counts 98
- Kansas ranks #36 in the number of connected classrooms Technology Counts 98
- 75% of the states have some type of statewide educational network EdvanceNet 1999
- It is estimated that by 2004, 85% of the data crossing over our computer networks will be video Apple Computer 1999

Some Quick Numbers

- 45% of all jobs in the year 2004 will be in industries that did not exist in 1994 U.S. Dept. of Labor, 1999
- Information Technology is the fastest growing sector of the Kansas Economy Kansas Dept. of Human Resources 1997
- Monthly costs of a T-1 connection range from free to over $2000 KSDE Survey 1999
- Only 26% of Kansas districts currently have a "T-1" Connection KSDE Survey 1999
- 190 school districts have declining enrollment

KAN-ED opens the door to

- Coordinated statewide initiatives
- Enhanced online data collection
- Coordinated Professional Development and sharing of Best Practices
- Coordinated Technical Assistance
- A richer curriculum for all students
- Affordable growth for the future

The time is now....

- Even if you are on the right track, you'll get run over if you just sit there. Will Rogers
- Destiny is not a matter of chance, it is a matter of choice. William Jennings Bryant
- My interest is in the future because I'm going to spend the rest of my life there. *Charles Kettering*

KANREN, The Great Plains Network, and Internet 2

Executive Summary

Senate Ways and Means Committee
April 5, 2000

Contents

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1. Introduction

This document provides background information for the Committee concerning three of the networking entities involved in the Kan-Ed project. This information was prepared by Doug Heacock, Executive Director of KANREN.

2. The Kansas Research and Education Network (KANREN)

KANREN is an independent, non-profit, education networking consortium that operates a statewide data network for nearly 70 education and research institutions across the state of Kansas. Administratively, KANREN is a service unit of The University of Kansas Center for Research, Inc. (CRINC), a non-profit foundation that administers research funds for the University. Although KANREN has not received any grant funding since 1994, KANREN has continued its affiliation with CRINC.

Today, KANREN is funded through membership fees and connection fees paid by its member institutions to cover the costs of providing Internet connectivity, statewide backbone network connectivity, consulting and training, and other network services. There are two full-time and two part-time members of the KANREN staff.

KANREN is governed by an Executive Committee elected from representatives from the member institutions. Representatives from the member institutions vote annually on KANREN's budget and rate structure, and on other matters of KANREN business and policy.

The membership of KANREN includes all six Regents universities (plus the KU Medical Center in Kansas City), twelve community colleges, twelve private colleges and universities, 17 public school districts, 16 public libraries,

and five other non-profit organizations. Membership is open to any Kansas education- or research-oriented institution, and to other non-profit organizations in Kansas with ties to education or research, subject to the approval of the KANREN Executive Committee.

KANREN's backbone network is a logical ring that connects major points of presence in Kansas City, Wichita, Manhattan, and Lawrence. The KANREN network is connected to the Great Plains Network (GPN) in Kansas City, which provides qualifying member institutions with access to Internet 2. KANREN employs frame relay, asynchronous transfer mode (ATM), and dedicated point-to-point circuits in the network. KANREN has member institutions in virtually every part of the state.

3. The Great Plains Network (GPN)

GPN is a consortium of Great Plains states dedicated to supporting scientific research through the use of networking technology. With the assistance of the National Science Foundation and matching funds from the member states, GPN has constructed a regional high-performance network that interconnects the state education networks in each of the GPN-affiliated states: North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Arkansas, and Minnesota. In 1997, GPN received grant funding from the National Science Foundation's Experimental Program to Stimulate Competitive Research (NSF/EPSCoR) to establish the network.

The primary GPN research focus is earth systems science, a field in which there are several significant research efforts already underway in the GPN states, including the EROS Data Center in South Dakota, and the Remote Sensing Laboratory at the University of Kansas.

In addition to providing high-speed network connectivity among the seven GPN states, GPN also provides connection to Internet 2 for those states that have Internet 2 member universities, by serving as an Internet 2 "gigaPOP" (see below).

4. Internet 2 (I2)

Internet 2 is a consortium of more than 170 research universities across the U.S., working in partnership with industry and government to develop and deploy advanced networking applications and technologies. The I2 consortium is governed by a non-profit organization, the University Corporation for Advanced Internet Development (UCAID).

Internet 2 is a very high-performance national network, consisting of high-capacity points of presence called gigaPOPs, interconnected by high-speed data circuits. Individual universities or consortia (as in the case of GPN) connect to a gigaPOP to gain access to Internet 2.

UCAID has recently modified its acceptable use policies to open the door for participation by non-UCAID-member institutions, including smaller colleges and universities, community colleges, and even K-12 school districts, provided that activity is authorized by the UCAID-member institutions through which those other sites connect to Internet 2.

5. How KANREN, GPN, and I2 fit together in the Kan-Ed project

KANREN is prepared to collaborate with DISC in connecting the KANREN statewide backbone to the KanWIN statewide backbone network, forming a larger, more robust Kan-Ed network, and sharing resources and infrastructure to serve all Kansas K-12 school districts and public libraries. KANREN's connection to GPN (and thus to Internet 2) would connect the Kan-Ed network to the state networks in the GPN states, and ultimately to Internet 2 itself. In addition, Kan-Ed school districts and libraries would be connected (through the KanWIN/KANREN connection) to all of KANREN's post-secondary member institutions.

KANREN's primary roles in the Kan-Ed project are to assist in the initial technical design, and to provide ongoing technical support and training for technology coordinators and others in the districts and libraries. The Kan-Ed project will provide funding for additional KANREN training and consulting staff for technical support and training for all Kan-Ed school districts and libraries.

6. Additional information and contacts

The Web sites noted below provide much additional information, including network maps, member lists, service descriptions, acceptable use policies, etc.

Kansas Research and Education Network
http://www.kanren.net
Doug Heacock, Executive Director
heacock@kanren.net
785-864-0422

Great Plains Network
http://www.greatplains.net
Rick Summerhill, Executive Director
rrsum@greatplains.net
785-539-6796

Internet 2
http://www.internet2.edu
Douglas Van Houweling, President and CEO
dvh@internet2.edu

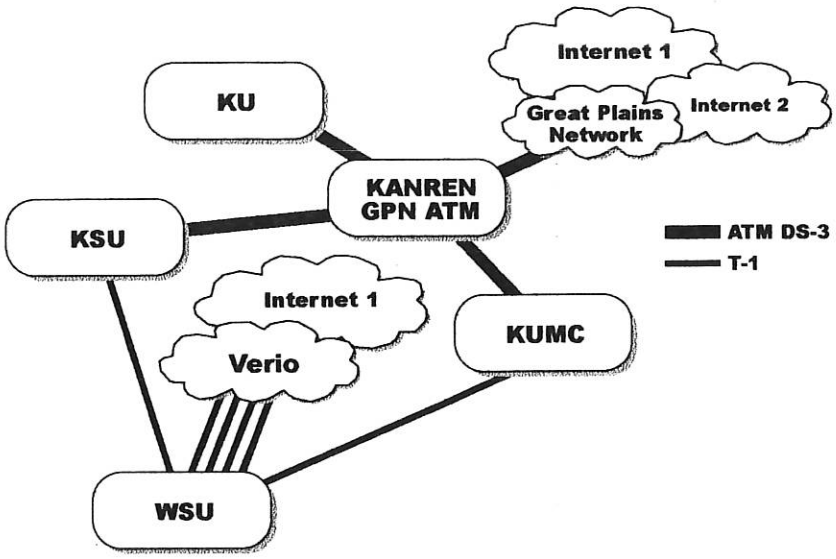


Fig. 1--KANREN Backbone Network

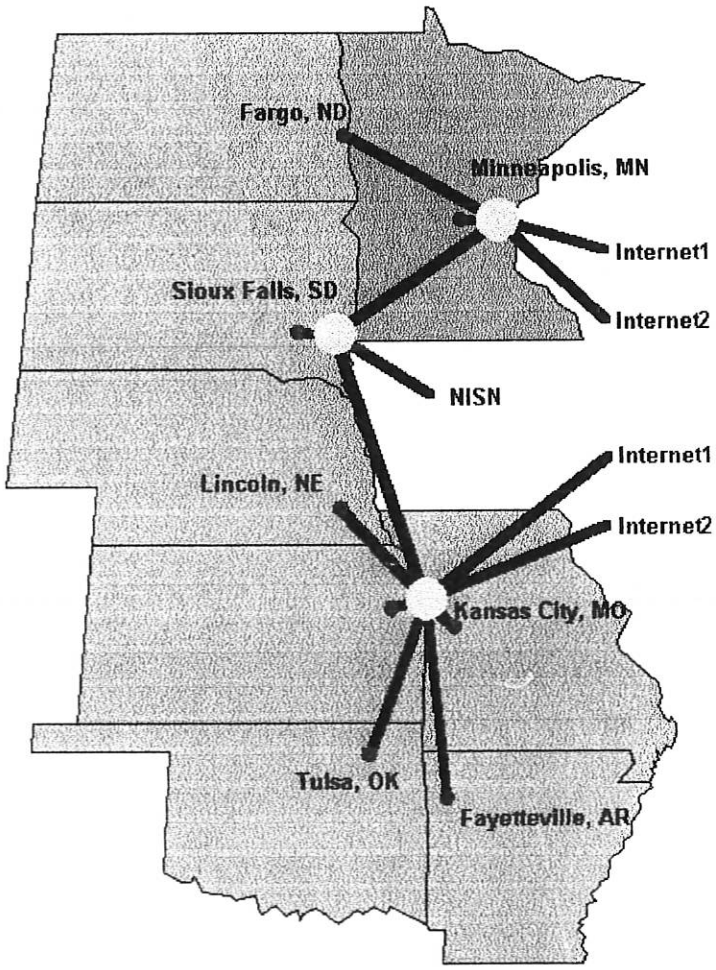


Fig. 2 – Great Plains Network

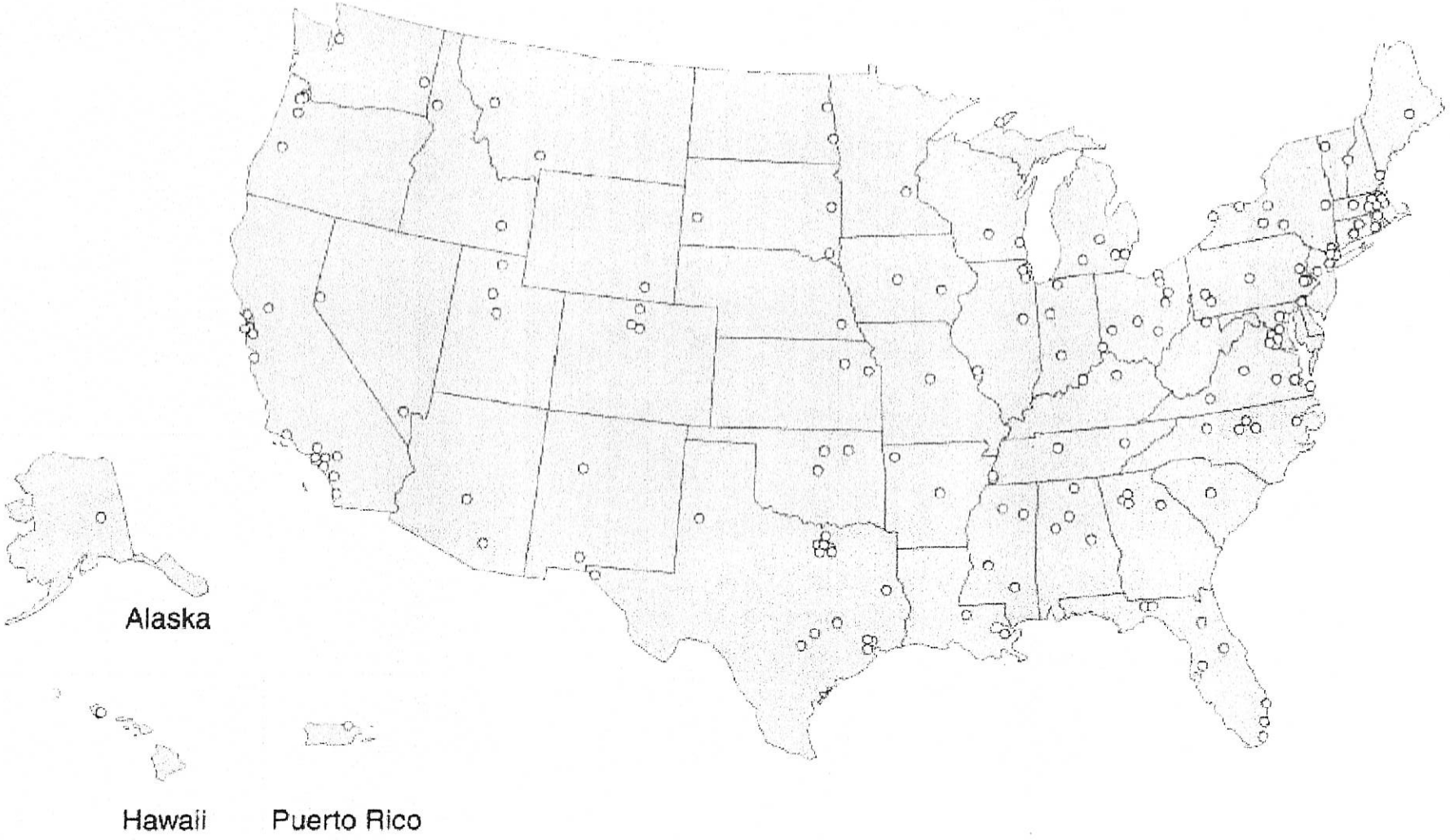
INTERNET2™

www.internet2.edu

Internet2 Universities

(176 Universities as of March 2000)

○ Denotes Member University



Ways and Means Committee of the Senate
Senator Dave Kerr, Chairperson
Senator Alicia Salisbury, Vice-Chairperson
Senator Marge Petty, Ranking Minority Member

April 5, 2000

Information from Duane Johnson, State Librarian, **speaking in support of Substitute House Bill 2591**, **KAN-ED**, a network of libraries and schoos for equal access to educational information.

Thank you very much for the opportunity to speak to the Utilities Committee.

The KAN-ED proposal results from a collaboration of schools, libraries, universities, DISC, and KANREN, ably assisted by the leadership of KTEC, working together to design the network that will serve Kansas education effectively in the twenty-first century.

In addition to the State Library and Department of Education and many groups associated with the DOE,
KAN-ED has been endorsed by -
The Kansas Library Association
The Kansas Association of School Librarians
The State Library Commission
The Kansas Library Network Board

Speaking to the benefits of the proposed network:

KAN-ED will equalize people's access to educational information and services.
Through this state-assisted network, every Kansan can have adequate access, near at hand, to local and distance education and related information services that will support the individual's education and life pursuits.

Learners in every classroom - by way of the schools, and learners in every community - by way of the local library, will have access to this education network. K through 12, vocational, college and university, and in fact **any Kansan** who wants access to this learning system will have access. With libraries, schools, and higher education working together, KAN-ED will effectively remove most geographic and economic barriers to educational information.

Current Internet access to Kansas libraries needs the improvement KAN-ED can give:

14% (37) of our public libraries have no Internet connection.

62% (166) of libraries must use low speed access to the Internet.

KAN-ED will improve connectivity by replacing inadequate modem connections with broadband access.
Broadband connection provides adequate speed of data transmission to effectively support education and information service. Some schools and more than 90% of libraries can afford only the modem connection that cannot effectively support information service for education.

KAN-ED will provide equalized access to scholarly information that will improve research for education and economic development.

Information content is an important part of this proposal. Students and researchers of all ages, in all areas of the state, will have access to the databases that will support their education goals, scholarly research, and economic development. Information from these sources is reliable, authoritative, and as technical as necessary to meet the need, and is safe for children to use.

KAN-ED will provide opportunities for training teachers and librarians in use of the technology and information services.

Insuring that teachers and librarians know how to make the best uses of the technology and information services is an important part of this proposal.

KAN-ED will help people of all ages learn essential technology skills.

Students through the schools and universities and adults through the local library will have a valuable, adequate access to technology training. With connectivity provided by this network, Kansas students and workers will become and remain competitive with those in other states who have access to their state's advanced technology. Our better trained work force will be more appealing to the industries that are important to Kansas development.

KAN-ED will help Kansas stay competitive in this global information economy.

The local library is a rich source of educational information to students and teachers.

The local library is the university library for the student learning through distance education.

For the majority of people who still are not online, the local library is the point of access to the state, national, and global information network.

The local library is the inviting, non-threatening place where many adults receive their early training in computers and Internet research.

Your local library is an essential partner assisting your district's preschool through 80 education.

Thank you very much for the opportunity to speak to the committee. I'll be pleased to respond to your questions.

Duane Johnson duanej@ink.org
State Library
Capitol Building, Third Floor
785-296-3296

KANSAS NATIONAL EDUCATION ASSOCIATION / 715 SW 10TH AVENUE / TOPEKA, KANSAS 66612-1686

Craig Grant Testimony
Senate Ways and Means Committee
Wednesday, April 5, 2000

Thank you Mr. Chairman. I am Craig Grant and today I am speaking for the Unified School Finance Coalition. The coalition is made up of the Kansas Association of School Boards, the Kansas NEA, Unified School Administrators of Kansas, Schools for Quality Education, the Kansas Education Coalition, Kansans for Local Control, the Kansas Association of Educational Services Agencies, and the individual school districts of Blue Valley, Kansas City, Shawnee Mission, Topeka, and Wichita.

This topic has been with us for a few years since the Department of Education requested a technology backbone a couple of years ago. There was an interim committee study last summer. We have issued testimony before committees and subcommittees at least six or seven times this session. Misunderstanding still abounds about the concept of KAN-ED. Some of the misunderstandings are understandable because of the technical aspects of the network Other misunderstandings may be encouraged by those who would not like a technology backbone for our schools.

This plan is so much more than an Internet connection for our schools. It is much more than a cable company offering (at the 11th hour, I might note) free Internet access to schools. The key part to this plan, in our opinion, is the connectivity between districts and libraries and universities and colleges in our state. This plan will allow direct communication between teachers in Bird City and Baxter Springs. This will allow students in Elwood and Elkhart to have interactive video between the two groups. This will allow a student in Scott City or Shawnee Mission to access the state research network to find answers for research papers they are writing. Yes, we will have Internet I along with this Internet II type of access; however, the possibilities for student and teacher training with this connectivity are what we are most excited about in the plan.

We have attempted to alleviate all the industry's concerns in changes to the bill as amended by the House Utilities Committee. We believe that the audit may or may not show that the industry may or may not be doing what the 1996 Act told them to do. One thing is for certain: the Telecommunications Act did not ask for this type of connectivity. This is the connectivity we need and our students need.

We ask that you pass HB 2591 favorably for passage.

Senate Ways and Means Committee
Date April 5, 2000
Attachment # 10

Telephone: (785) 232-8271 FAX: (785) 232-6012

FEDERICO CONSULTING
A Public Affairs Group

Government Affairs
Public Relations
Regulatory Counsel
JOHN J. FEDERICO, J.D.

Testimony In Reference To Sub HB 2591

Presented By John Federico; Federico Consulting
On Behalf of the Kansas Cable Telecommunications Assn.

Senate Ways & Means Committee
April 5, 2000

Thank you Mr. Chairman for the opportunity to offer our "qualified" support of Sub HB 2591. I appear before you today on behalf of the Kansas Cable Telecommunications Association to state that both our "support" and our "concerns" related to the Kan-Ed Initiative remain the same. From the earliest discussion of implementing a statewide technology "backbone," the cable television industry has been supportive of the "policy" behind the effort to connect schools and libraries across the state. But, we remain concerned about the details of the project. More specifically, the extent of the involvement of the state, and/or the impact the Kan-Ed project will have on cable companies who have invested millions of private dollars in system-upgrades in an effort to bring the newest technology, including broadband connections, to both small and large communities across Kansas.

It is my belief that the actions of the cable television industry speaks volumes about their commitment to "connecting" our Kansas schools and libraries. I have attached a sampling of schools and school districts "wired" if you will, by the two largest providers of cable television services in the state, Cox Communications and Time Warner Cable. It serves as proof that on a daily basis, the cable industry is responding to the needs of school districts by providing **free** cable connections which will allow them to deliver the technology that best suits the schools needs.

The technology the cable industry is deploying currently allows us to provide high speed internet access and interactive distance learning through a variety of wide-area-networks to school districts of various sizes and locations. We are anxious to continue our expansion into other communities in the state, both small and large, and we are hopeful that legislation such as Sub HB 2591 does not serve as an impediment to our commitment to our customers.

I reiterate the KCTA's support of the noble concept of bringing the latest technology to schools and libraries across the state. It is our contention though, that through a competitive bidding process among private, competing entities,...schools **are** being connected. Further indicative of our commitment to this initiative, is the extensive effort of Kansas cable companies to help school districts access and utilize federal

815 SW Topeka Blvd Second Floor Topeka, KS
Office (785) 232-2557 Fax (785) 232-1703 Pager (785) 887-48

Universal Service Fund monies to help pay for the technology upgrades they desire for their schools.

Again, although supportive of the concept and the unarguable need to connect Kansas schools and libraries, we as an industry still have many questions that we hope can be answered before consideration of the bill before you today. As Sub HB 2591 worked its way through the House, the bill was amended by the House Utilities Committee with the specific intent to ensure that the state will not compete with private industry. (See page 2 lines 8 - 17). Our concerns though are that the word "telecommunications" in line 10 does not include the internet services provided by the cable industry. Also, if it is in fact the desire of the legislature to not have the state directly compete with private industry I respectfully ask that you reconsider the language on Page 1, lines15-16. The KCTA suggests that the language that reads *"The purpose of Kan-Ed shall be to provide internet connectivity...."* should possibly be changed to, *"The purpose of Kan-Ed shall be to assist in the implementation of internet connectivity..."* Please see attached balloon amendments.

Other questions KCTA members are asking are; Will the unique technology that the cable industry utilizes be included for consideration in the technology backbone? What of stranded investments? What is the timeline? Will passage of a Kan-Ed bill dissuade private investment to upgrade cable systems?

In closing, we applaud your efforts, and we certainly do not envy the difficult decisions you will have to make as you piece this initiative together. The Kansas cable industry remains committed to our efforts to bring the best technology to all four corners of the state and stand ready to partner with the State to achieve the same.

Educational Resources provided by Time Warner Cable

- **Free cable service** for every school in Time Warner Cable's service area ... that's nearly 500 buildings!

- A **free subscription** to *Cable in the Classroom* magazine, including programming information by discipline and a pull-out calendar.

- *Connections*, a **free monthly newsletter** for Time Warner Cable's schools that includes programming highlights, information about free educational support materials and opportunities for schools, teachers and students to win scholarships, video equipment and other exciting prizes!

- **Free workshops** for educators, parents and community groups, including:

  - *Introduction to Cable in the Classroom* — an overview of *Cable in the Classroom*, including information about free educational support materials and tips on how to use *Cable in the Classroom* programming to enhance lesson plans

  - *Taking Charge of Your TV* — a critical viewing workshop created in partnership with the national PTA for parents and community groups

  - *Building Interdisciplinary Units*—Class using *Cable in the Classroom* programming and the internet to build interdisciplinary units (available for 1 hour credit) Time Warner Cable & Baker University

  - *Road Runner Class Act Workshop*-designed to aid in locations free curriculum materials that correspond with Cable in the Classroom programming

  - Customized workshops to meet your needs

- **Educational access channels** (one for K-12, one for higher education) managed by UMKC. The following fourteen school districts participate in the KCMO K-12 channel: Center, Grandview, Hickman Mills, Kansas City, MO, Lee's Summit, Liberty, North Kansas City, Park Hill, Platte County R-III, Raytown, Genesis School and the Catholic Diocese (KC/St. Joseph). We also provide a K-12 channel in Liberty that is programmed by Liberty High School and are working with the Shawnee Mission, Olathe and Blue Valley School Districts to coordinate their use of a channel on the OP system.

- **"EduBiz" services** — connecting school buildings and districts to create **"virtual campuses"** via fiber optic cable enabling schools to transfer high speed video and data to one another. Time Warner Cable also provides information to school districts in regards to eligibility of the Universal Service Fund (USF).

- **Road Runner Class Act**, Time Warner Cable's high-speed Internet access service. Access the Internet at speeds 50-100 times faster than traditional phone lines. We'll provide a **free cable modem and service** to every school!

For more information, contact **Kathy Hoff** at (816) 358-5360, ext. 237 or **kathy.hoff@twcable.com**

TIME WARNER CABLE

ID	State	District	School Name	Street	City
42					
02					
02	CT		Time Warner Cable	300 First Stamford Place	Stamford
11	KS	Blue Valley	Alternative School	7500 W. 149 Terrace	Overland Park
12	KS	Blue Valley	Blue River Elementary	4701 W 163 Terrace	Stilwell
13	KS	Blue Valley	Blue Valley High School	6001 W. 159 Street	Stilwell
14	KS	Blue Valley	Blue Valley Middle School	4601 W. 168 Terrace	Stilwell
15	KS	Blue Valley	Blue Valley North High School	12200 Lamar Avenue	Overland Park
16	KS	Blue Valley	Blue Valley NW High School	13260 Switzer	Overland Park
17	KS	Blue Valley	Blue Valley School District	15020 Metcalf Avenue	Overland Park
18	KS	Blue Valley	Blue Valley School District	15020 Metcalf Avenue	Overland Park
19	KS	Blue Valley	Cottonwood Point Elementary	10521 W. 129 Street	Overland Park
20	KS	Blue Valley	Harmoney Middle School	10101 W. 141 Street	Overland Park
21	KS	Blue Valley	Harmony Elementary	14140 Grant	Overland Park
22	KS	Blue Valley	Heartland Elementary	12775 Goodman	Overland Park
23	KS	Blue Valley	Indian Valley Elementary	11600 Knox	Overland Park
24	KS	Blue Valley	Lakewood Elementary	14600 Lamar	Overland Park
25	KS	Blue Valley	Leawood Elementary	2400 W. 123 Street	Leawood
26	KS	Blue Valley	Leawood Middle School	2410 W. 128th Street	Leawood
27	KS	Blue Valley	Mission Trail Elementary	13200 Mission Road	Leawood
28	KS	Blue Valley	Morse Elementary	15201 Monrovia	Overland Park
29	KS	Blue Valley	Oak Hill Elementary	10200 W. 124th Street	Overland Park
30	KS	Blue Valley	Overland Trail Elementary	6225 W. 133 Street	Overland Park
31	KS	Blue Valley	Overland Trail Middle School	6201 W. 133rd Street	Overland Park
32	KS	Blue Valley	Oxford MIddle School	12500 Switzer	Overland Park
33	KS	Blue Valley	Parents as Teachers	7500 W. 149 Terrace	Overland Park
34	KS	Blue Valley	Pleasant Ridge Middle School	9000 W.165th Street	Stilwell
35	KS	Blue Valley	Prairie Star Elementary	3800 W 143 Street	Leawood
36	KS	Blue Valley	Prairie Star Middle School	14201 Mission Road	Leawood
37	KS	Blue Valley	Stanley Elementary	6121 W. 158 Street	Overland Park
38	KS	Blue Valley	Stilwell Elementary	6410 W. 1098 Street	Stilwell
39	KS	Blue Valley	Sunset Ridge	14901 Englan	Overland Park
40	KS	Blue Valley	Tomahawk Ridge Elementary	11902 Lowell	Overland Park
41	KS	Blue Valley	Valley Park Elementary	12301 Lamar	Overland Park
43	KS	Bonner Springs	Bonner Springs Elementary	212 S. Neconi	Bonner Springs
44	KS	Bonner Springs	Bonner Springs High School	100 McDaniel	Bonner Springs
45	KS	Bonner Springs	Bonner Springs School District	2200 South 138th Street	Bonner Springs
47	KS	Bonner Springs	Clark Junior High	420 Bluecrest	Bonner Springs
46	KS	Bonner Springs	Clark Junior High	420 Bluecrest	Bonner Springs
48	KS	Bonner Springs	Edwardsville Elementary	1700 S. 104th St.	Bonner Springs
49	KS	Bonner Springs	Unified School District #204	2200 S. 138th St.	Bonner Springs
59	KS	DeSoto	DeSoto Elementary	8355 Peoria	DeSoto
60	KS	DeSoto	DeSoto High School	P.O. Box 469, 8800 Penne	DeSoto
61	KS	DeSoto	DeSoto Jr. High	32905 W. 84th	DeSoto
62	KS	DeSoto	Education Center	8305 Peoria, P.O. Box 449	DeSoto
02	KS	DeSoto	Starside Elementary	35400 W. 91St. St.	DeSoto
63	KS	Ft. Leavenworth	Bradley Elementary	7th Calvary Road	Ft. Leavenworth

ID	State	District	School Name	Street	City
64	KS	Ft. Leavenworth	Eisenhower Elementary	King & Liggett Ave.	Ft. Leavenworth
65	KS	Ft. Leavenworth	MacArthur Elementary	Biddle Blvd	Ft. Leavenworth
66	KS	Ft. Leavenworth	Patton Jr. High	5 Grant Avenue	Ft. Leavenworth
68	KS	Gardner	Gardner Elementary	218 E. Shawnee	Gardner
69	KS	Gardner	Gardner-Edgerton High	318 E. Washington	Gardner
70	KS	Gardner	Nike Middle School	19500 S. Gardner Rd.	Gardner
71	KS	Gardner	Sunflower Elementary	775 North Center	Gardner
72	KS	Gardner	Unified School District #231	318 E. Washington, Box 9	Gardner
02	KS	KCK	Argentine Middle School	2123 Ruby	Kansas City
02	KS	KCK	Arrowhead Middle School	1715 N. 82nd St.	Kansas City
02	KS	KCK	Banneker Elementary	2026 N. 4th St.	Kansas City
02	KS	KCK	Bethel Elementary	7850 Yecker Ave.	Kansas City
02	KS	KCK	Central Middle School	925 Ivandale	Kansas City
02	KS	KCK	Central Program Intervention	815 Barnett Ave.	Kansas City
02	KS	KCK	Claude Huyck	1530 N. 83rd St.	Kansas City
02	KS	KCK	Coronado Middle School	1735 N. 64th Terr.	Kansas City
02	KS	KCK	District 500 School Board	2324 N. 88th Dr.	Kansas City
02	KS	KCK	Douglas Elementary	1310 N. 9th St.	Kansas City
02	KS	KCK	Eisenhower Middle School	2901 N. 72nd St.	Kansas City
02	KS	KCK	Eisenhower Middle School	2901 N. 72nd St.	Kansas City
02	KS	KCK	Emerson Elementary	1429 S. 29th St.	Kansas City
02	KS	KCK	Eugene Ware Elementary	4820 Oakland	Kansas City
02	KS	KCK	F.L. Schlagle High School	2214 N. 59 th St.	Kansas City
02	KS	KCK	Fairfax Elementary	3101 N. 10th St.	Kansas City
02	KS	KCK	Francis Willard Elementary	3400 Orville	Kansas City
02	KS	KCK	Frank Rushton Elementary	2605 W. 43rd	Kansas City
02	KS	KCK	Grant Elementary	1510 N. 4th St.	Kansas City
02	KS	KCK	Hawthorne Elementary	11th & Waverly	Kansas City
02	KS	KCK	Hazel Grove Elementary	2401 N. 67th St.	Kansas City
02	KS	KCK	Highland Middle School	3101 S. 51st St.	Kansas City
02	KS	KCK	J.C. Harmon High School	2400 Steele Rd.	Kansas City
02	KS	KCK	John F. Kennedy Elementary	2600 N. 72nd St.	Kansas City
02	KS	KCK	John Fiske Elementary	625 S. Valley	Kansas City
02	KS	KCK	Lindbergh Elementary	641 N. 57th St.	Kansas City
02	KS	KCK	M.E. Pearson Elementary	310 N. 11th St.	Kansas City
02	KS	KCK	Mark Twain Elementary	2300 Minnesota Ave.	Kansas City
02	KS	KCK	Morse Elementary	S.Baltimore & Miami	Kansas City
02	KS	KCK	New Stanley Elementary	36th & Metropolita	Kansas City
02	KS	KCK	Noble Prentis Elementary	2337 S. 14th St.	Kansas City
02	KS	KCK	Northwest Middle School	18th & Haskell	Kansas City
02	KS	KCK	Parker Elementary	3334 Haskell	Kansas City
02	KS	KCK	Professional Devlpmt Center	611 N. 14th St.	Kansas City
02	KS	KCK	Quindaro Elementary	2800 Farrow	Kansas City
02	KS	KCK	Roosevelt Elementary	1303 N. 36th St.	Kansas City
02	KS	KCK	Rosedale Middle School	3600 Springfield	Kansas City
02	KS	KCK	Silver City Elementary	2515 Lawrence Ave.	Kansas City
02	KS	KCK	Stoney Point North	8200 Elizabeth	Kansas City

ID	State	District	School Name	Street	City
02	KS	KCK	Stoney Point South Elementary	150 S. 78 thSt.	Kansas City
02	KS	KCK	Sumner Academy	8th & Oakland	Kansas City
02	KS	KCK	T. A. Edison Elementary	1000 Locust	Kansas City
02	KS	KCK	Unified School District #500	625 Minnesota Ave.	Kansas City
02	KS	KCK	Unified School District #500	625 Minnesota Ave.	Kansas City
02	KS	KCK	Unified School District #500	625 Minnesota Ave.	Kansas City
02	KS	KCK	W.A. White Elementary	2600 N. 43th Terr.	Kansas City
02	KS	KCK	Washington High School	7340 Leavenworth Rd.	Kansas City
02	KS	KCK	Welborn Elementary	5200 Leavenworth Rd.	Kansas City
02	KS	KCK	West Middle School	2600 N. 44th St.	Kansas City
02	KS	KCK	West Middle School	2600 N. 44 thSt.	Kansas City
02	KS	KCK	White Church Elementary	2226 N. 85th St.	Kansas City
02	KS	KCK	Whittier Elementary	295 S. 10th St.	Kansas City
02	KS	KCK	Wyandotte High School	25th & Minnesota	Kansas City
02	KS	KCK	Wyandotte Spec Ed Coop	600 Minnesota Ave.	Kansas City
02	KS	KCKS	District 500 School Board	8722 Greeley	Kansas City
02	KS	Lansing	Intermediate School	108 S. Second	Lansing
02	KS	Lansing	Lansing Elementary	210 E. Mary	Lansing
02	KS	Lansing	Lansing Elementary	210 E. Mary	Lansing
02	KS	Lansing	Lansing High School	220 Lion Lane	Lansing
02	KS	Lansing	Lansing Middle School	300 E. Olive	Lansing
02	KS	Lansing	Sallie Zoll	200 E. Mary	Lansing
02	KS	Lansing	Unified School District #469	613 Holiday Plaza	Lansing
02	KS	Lansing	Unified School District #469	613 Holiday Plaza	Lansing
02	KS	Leavenworth	Anthony Elementary	570 Evergreen	Leavenworth
02	KS	Leavenworth	Ben Day Elementary	1100 S. 3rd Ave.	Leavenworth
02	KS	Leavenworth	David Brewer School	401 North 17th Street	Leavenworth
02	KS	Leavenworth	East Middle School	400 Chestnut	Leavenworth
02	KS	Leavenworth	Howard Wilson Elementary	616 Grand Ave.	Leavenworth
02	KS	Leavenworth	Leavenworth High School	2012 10th Ave.	Leavenworth
02	KS	Leavenworth	Leavenworth School District	200 N. 4th St.	Leavenworth
02	KS	Leavenworth	Lincoln Elementary	820 N. 5th St.	Leavenworth
02	KS	Leavenworth	Muncie Elementary	541 Muncie Rd.	Leavenworth
02	KS	Leavenworth	Nettie Hartnet Elementary	1000 3rd Ave.	Leavenworth
02	KS	Leavenworth	North Broadway Elementary	Broadway & Kiowa	Leavenworth
02	KS	Leavenworth	Unified School District #453	200 N. 4th St.	Leavenworth
02	KS	Leavenworth	West Middle School	1901 Spruce St.	Leavenworth
02	KS	Olathe	Bentwood Elementary	13000 Bond	Overland Park
02	KS	Olathe	Pleasant Ridge Elementary	12235 Rosehill Road	Overland Park
02	KS	Private	All Saints Consilidated	809 Vermont	K.C.
02	KS	Private	Ascension Elementary	9510 W. 127th	Overland Park
02	KS	Private	Bible Baptist School	427 Emerson St.	Bonner Springs
02	KS	Private	Bishop Miege High School	5041 Reinhardt	Roeland Park
02	KS	Private	Bishop Ward High School	708 N. 18th St.	K.C.
02	KS	Private	Cathedral of St. Peters	422 N. 14th St.	K.C.
02	KS	Private	Christ the King Elementary	3027 N. 54th St.	Kansas City
02	KS	Private	Cure of Ars Elementary	9403 Mission Road	Leawood

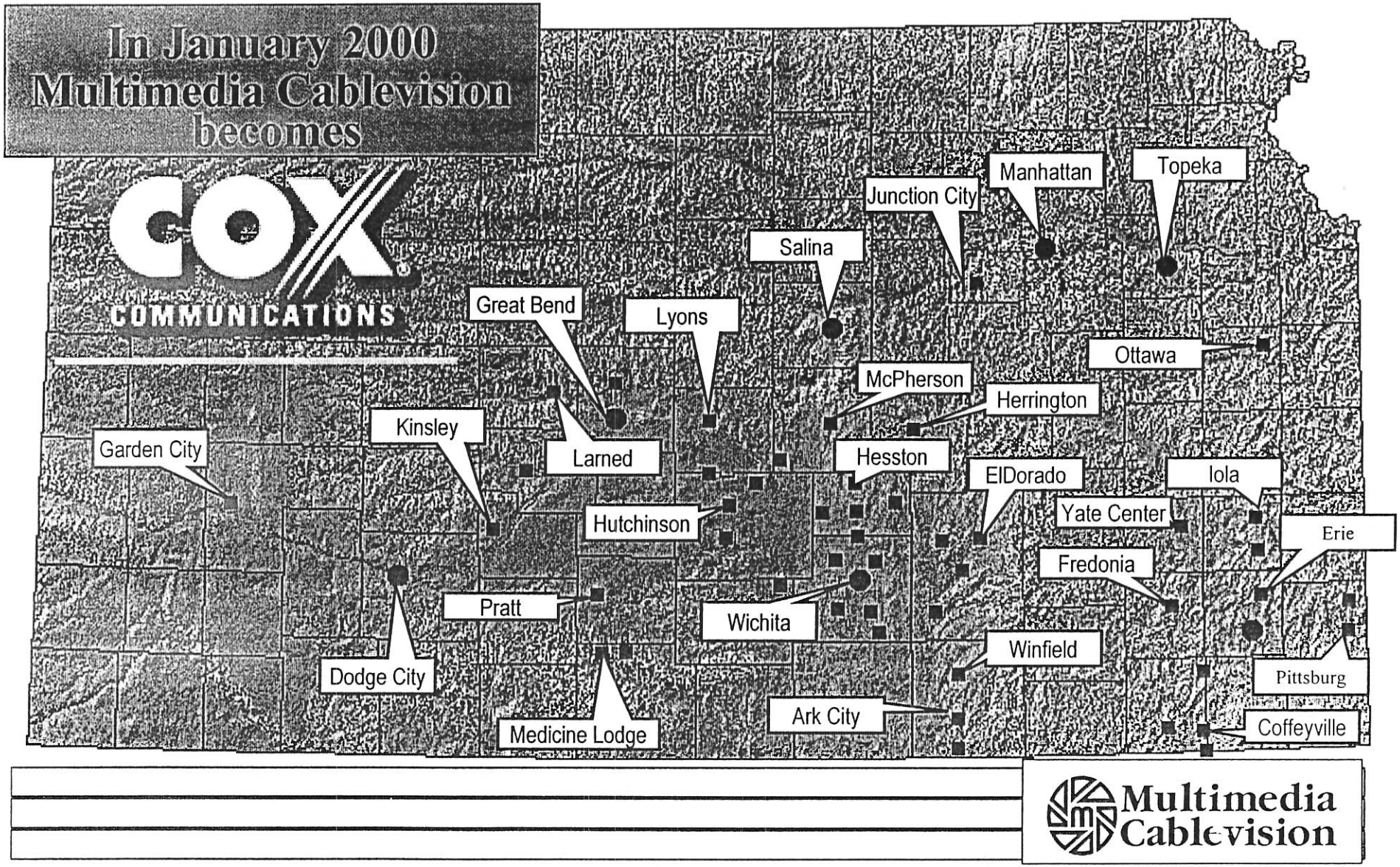
11-6

ID	State	District	School Name	Street	City
02	KS	Private	Good Shepherd Elementary	12800 W. 75th St.	Shawnee
02	KS	Private	Grace Lutheran	3333 Wood	K.C.
02	KS	Private	Holy Cross Elementary	8101 W. 95th St.	Overland Park
02	KS	Private	Holy Name Elementary School	1007 Southwest Blvd.	K.C.
02	KS	Private	Holy Spirit Elementary	11300 W. 103rd Street	Overland Park
02	KS	Private	Immaculata High School	600 Shawnee Street	Leavenworth
02	KS	Private	Kiddie College	7502 Nebraska	Kansas City
02	KS	Private	Muncie Christian School	3650 N. 67th Street	K.C.
02	KS	Private	Nativity Elementary	3700 W. 119th Stret	Leawood
02	KS	Private	Oak Grove Baptist School	5500 Woodend	K.C.
02	KS	Private	Open Door Baptist School	545 S. 94th St.	K.C.
02	KS	Private	Our Lady of Unity School	2646 S. 34th	K.C.
02	KS	Private	Oxford Park Academy	13200 Nall Avenue	Overland Park
02	KS	Private	Pleasant Green School	340 Oakland	K.C.
02	KS	Private	Queen of the Holy Rosary Elem	6915 W. 71st St.	Overland Park
02	KS	Private	S. V. Lindsey School	3310 Garfield	Kansas City
02	KS	Private	St. Agnes Elementary	5130 Mission Road	Roeland Park
02	KS	Private	St. Ann Elementary	7241 Mission Road	Prairie Village
02	KS	Private	St. John Elementary	420 Barnett	Kansas City
02	KS	Private	St. Joseph Elementary	5901 Flint	Shawnee
02	KS	Private	St. Patrick Elementary	1066 N. 94th St.	Kansas City
02	KS	Private	St. Patrick Elementary School	515 Ohio Avenue	Kansas City
02	KS	Private	St. Paul Elementary	920 Honeysuckle	Olathe
02	KS	Private	St. Paul's Lutheran	320 N. 7th St.	Leavenworth
02	KS	Private	St. Peter's Elementary	422 N. 14th	Kansas City
02	KS	Private	St. Pius X Elementary	5500 Woodson	Mission
02	KS	Private	St. Thomas Aquinas H.S.	11411 Pflumm Road	Overland Park
02	KS	Private	Xavier Early Childhood	727 Pennsylvania	Leavenworth
02	KS	Private	Xavier Elementary	522 Kickapoo	Leavenworth
02	KS	Private	Xavier Elementary Primary	1409 2nd Avenue	Leavenworth
02	KS	Private	Xavier Elementary Upper Schoo	721 Osage	Leavenworth
02	KS	PTA	President, Council of PTA	3128 N. 49th Dr.	K.C.
02	KS	Shawnee Mission	Antioch Middle School	8200 W. 71st Street	Overland Park
02	KS	Shawnee Mission	Apache Elementary School	8910 Goddard	Overland Park
02	KS	Shawnee Mission	Arrowhead Elementary School	6601 Santa Fe	Overland Park
02	KS	Shawnee Mission	Belinder Elementary School	7230 Belinder	Prairie Village
02	KS	Shawnee Mission	Benninghoven Elementary Scho	6720 Caenen	Shawnee
02	KS	Shawnee Mission	Bluejacket/Flint Elementary	11615 W. 49 Terrace	Shawnee
02	KS	Shawnee Mission	Bonjour Elementary School	9400 Pflumm	Lenexa
02	KS	Shawnee Mission	Briarwood Elementary School	5300 W. 86th Street	Overland Park
02	KS	Shawnee Mission	Broken Arrow Elementary Scho	5901 Alden	Shawnee
02	KS	Shawnee Mission	Brookridge Elementary School	9920 Lowell	Overland Park
02	KS	Shawnee Mission	Brookwood Elementary School	3411 W. 103rd Street	Overland Park
02	KS	Shawnee Mission	Carpenter Elementary School	9700 W. 96th Street	Overland Park
02	KS	Shawnee Mission	Cherokee Elementary School	8714 Antioch	Overland Park
02	KS	Shawnee Mission	Christa McAuliffe Elementary	15600 W. 83rd Street	Lenexa
02	KS	Shawnee Mission	Comanche Elementary School	8200 Grant	Overland Park

ID	State	District	School Name	Street	City
02	KS	Shawnee Mission	Corinth Elementary School	8301 Mission	Overland Park
02	KS	Shawnee Mission	Crestview Elementary School	6101 Craig	Merriam
02	KS	Shawnee Mission	Dorothy Moody Elementary	10101 England	Overland Park
02	KS	Shawnee Mission	East Antioch Elementary School	7342 Lowell	Overland Park
02	KS	Shawnee Mission	Highlands Elementary School	6200 Roe	Mission
02	KS	Shawnee Mission	Hocker Grove School	10400 Johnson Drive	Shawnee
02	KS	Shawnee Mission	Indian Creek Technology Cente	4401 W. 103rd Street	Shawnee Missio
02	KS	Shawnee Mission	Indian Hills School	6400 Mission Road	Prairie Village
02	KS	Shawnee Mission	Indian Woods School	9700 Woodson Road	Overland Park
02	KS	Shawnee Mission	John Diemer Elementary School	9600 Lamar	Overland Park
02	KS	Shawnee Mission	Merriam Elementary School	6100 Mastin	Merriam
02	KS	Shawnee Mission	Mill Creek Elementary School	13951 W 79th Street	Lenexa
02	KS	Shawnee Mission	Mission Valley School	8500 Mission Road	Prairie Village
02	KS	Shawnee Mission	Nall Hills Elementary School	10201 Horton	Overland Park
02	KS	Shawnee Mission	Nieman Elementary School	10917 W 67th Street	Shawnee
02	KS	Shawnee Mission	Oak Park Elementary School	10000 Nieman	Overland Park
02	KS	Shawnee Mission	Overland Park Elementary	8200 Santa Fe	Overland Park
02	KS	Shawnee Mission	Prairie Elementary School	6642 Mission	Prairie Village
02	KS	Shawnee Mission	Ray Marsh Elementary School	5642 Rosehill	Shawnee
02	KS	Shawnee Mission	Rising Star Elementary School	8600 Candlelight	Lenexa
02	KS	Shawnee MIssion	Roeland Park Elementary Scho	5527 Juniper	Roeland Park
02	KS	Shawnee Mission	Roesland Elementary School	4900 Parish	Roeland Park
02	KS	Shawnee Mission	Rushton Elementary School	6001 W. 52nd Street	Mission
02	KS	Shawnee Mission	Santa Fe Trail Elementary Scho	7100 Lamar	Overland Park
02	KS	Shawnee Mission	Shawnee Elementary School	11230 W. 75th Street	Shawnee
02	KS	Shawnee Mission	Shawnee Mission East High	7500 Mission Road	Prairie Village
02	KS	Shawnee Mission	Shawnee Mission North High	7401 Johnson Drive	Overland Park
02	KS	Shawnee Mission	Shawnee Mission NW High	12701 W 67th Street	Shawnee
02	KS	Shawnee Mission	Shawnee Mission South High	5800 W. 107th Street	Overland Park
02	KS	Shawnee Mission	Shawnee Mission West High	8800 W. 85th Street	Overland Park
02	KS	Shawnee Mission	Somerset Elementary School	2700 Somerset	Overland Park
02	KS	Shawnee Mission	South Park Elementary School	8715 W. 49th Terrace	Merriam
02	KS	Shawnee Mission	Sunflower Elementary School	8955 Loiret	Lenexa
02	KS	Shawnee Mission	Tomahawk Elementary School	6301 W. 78th Street	Overland Park
02	KS	Shawnee Mission	Trailridge Middle School	7500 Quivira Road	Shawnee
02	KS	Shawnee Mission	Trailwood Elementary School	5101 W.95th Stret	Overland Park
02	KS	Shawnee Mission	West Antioch Elementary Schoo	7101 Switzer	Merriam
02	KS	Shawnee Mission	Westridge Middle School	9300 Nieman Road	Overland Park
02	KS	Shawnee Mission	Westwood View Elementary	2511 West 50th Street	Westwood
02	KS	Shawnee Mission	Westwood View Elementary	2511 W. 50th Street	Westwood
02	KS	Shawnee Misson	AEP Middle School	5900 Lamar	Mission
02	KS	Shawnee Misson	Pawnee Elementary School	9501 W. 91st Street	Overland Park
02	KS	Turner	Highland Middle School	3101 S. 51st Street	K.C.
02	KS	Turner	Junction Primary	2570 S. 42nd Street	K.C.
02	KS	Turner	Juntion Elementary	2540 Junction Road	K.C.
02	KS	Turner	Morris Elementary	7125 Gibbs Road	K.C.
02	KS	Turner	Muncie Elementary	6425 Riverview	K.C.

ID	State	District	School Name	Street	City
02	KS	Turner	Oak Grove Elementary	5340 Oak Grove Rd.	K.C.
02	KS	Turner	Pierson Jr High	1800 S. 55th St.	K.C.
02	KS	Turner	Turner Elementary	831 S. 55th St.	K.C.
02	KS	Turner	Turner High School	1312 S. 55th St.	K.C.
02	KS	Turner	Turner School District #202	2542 Junction Rd.	K.C.
02	KS	Turner	Turner School District #202	2542 Junction Rd.	K.C.
02	KS	Turner	Unified School District #202	800 S. 55th St.	K.C.

We Serve over 90 communities in Kansas

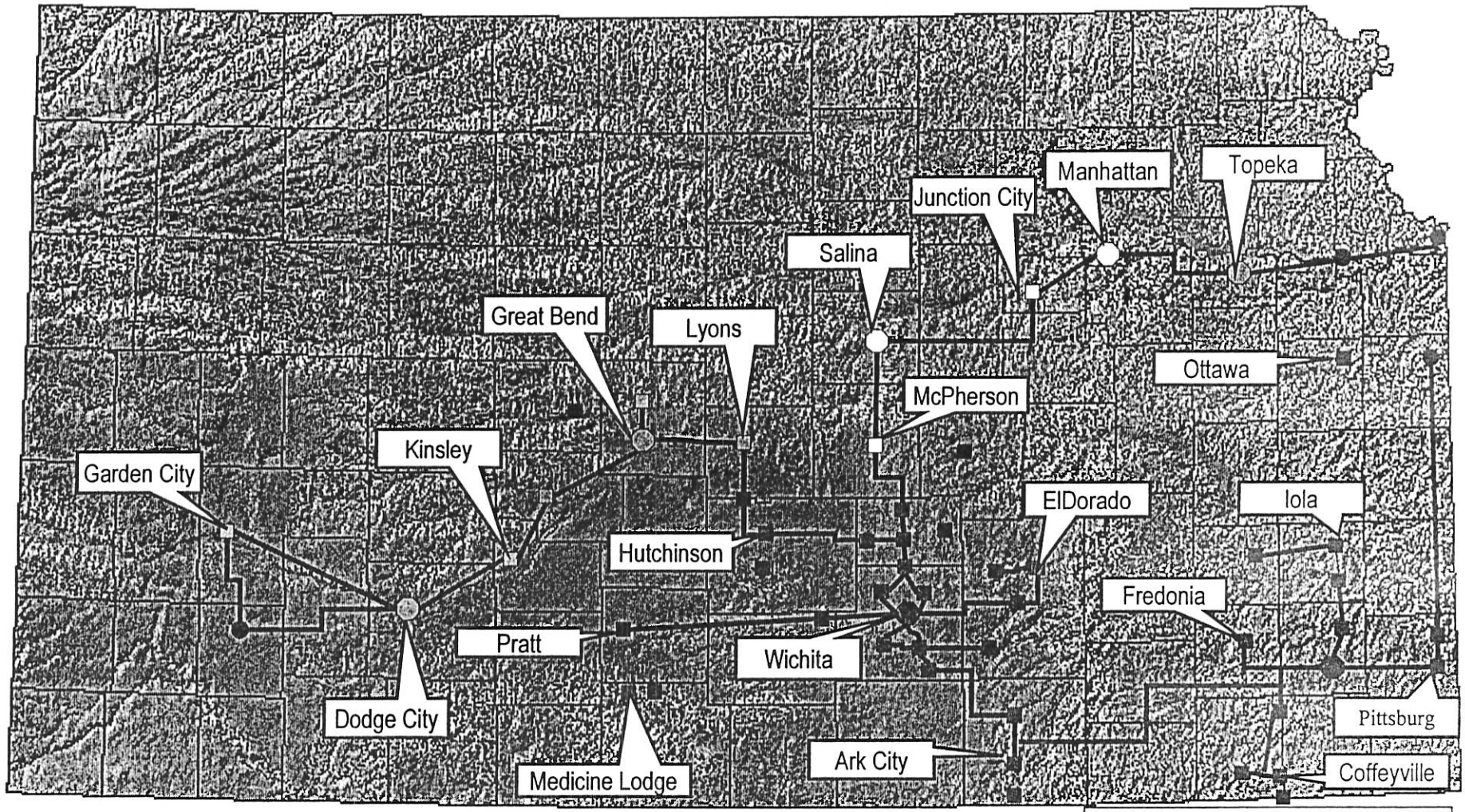


TECHNOLOGY PROVIDED

- **HIGH SPEED INTERNET**
  - Road Runner High Speed Online INTERNET Service delivered anywhere we have cable.
- **WIDE AREA NETWORKS**
  - Fiber networks can be constructed throughout the state and can be custom tailored for your needs.
- **INTERACTIVE DISTANCE LEARNING**
  - Utilizing the latest advances in technology IDL networks can connect your site to the outside world.

Kansas Fiber Network

(Existing and Planned)



Multimedia Cablevision

11-12

Today Cable Television provides so much more!

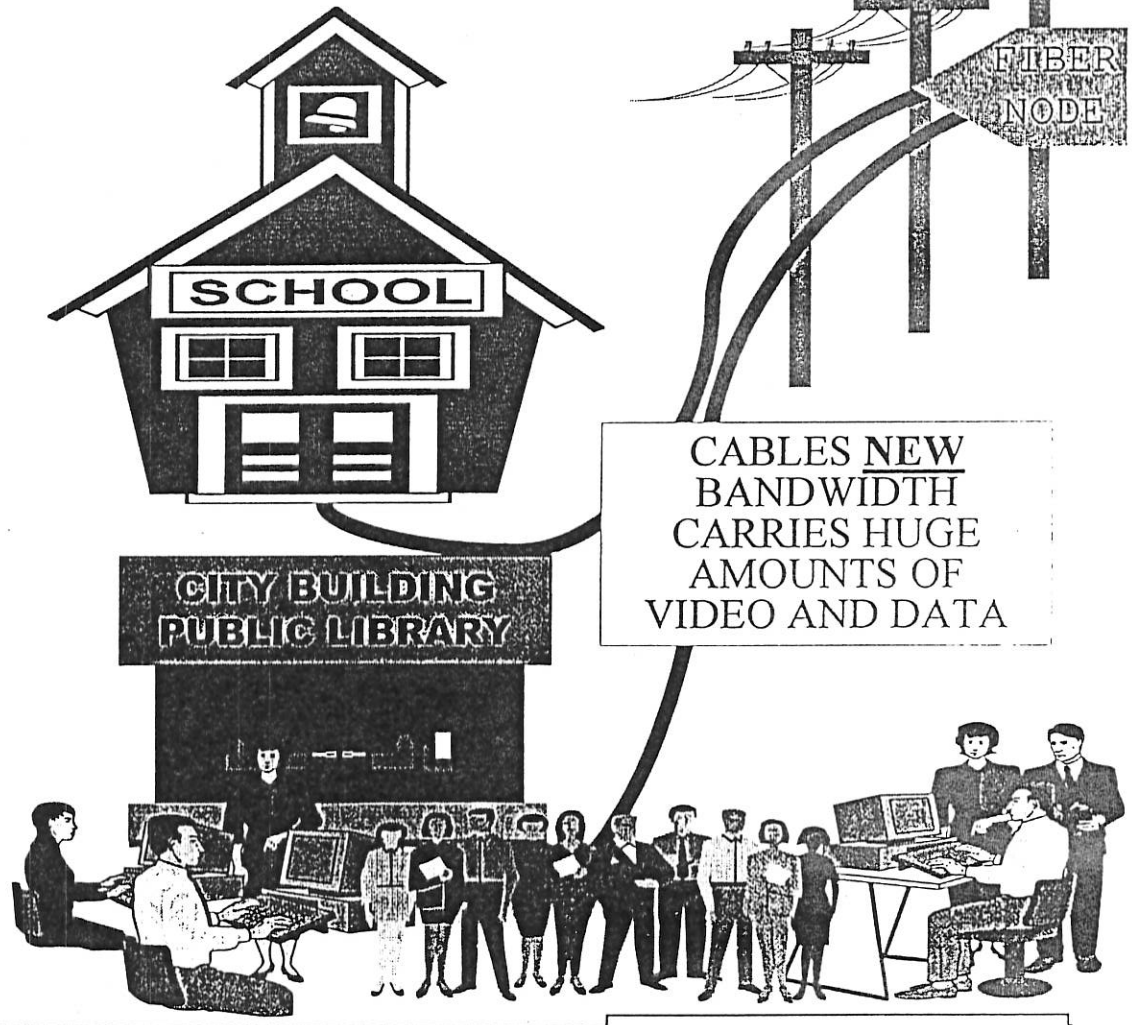
FREE CABLE TV

HIGHSPEED INTERNET

WEBTEACHER

WIDE AREA NETWORKS

INTERACTIVE DISTANCE LEARNING



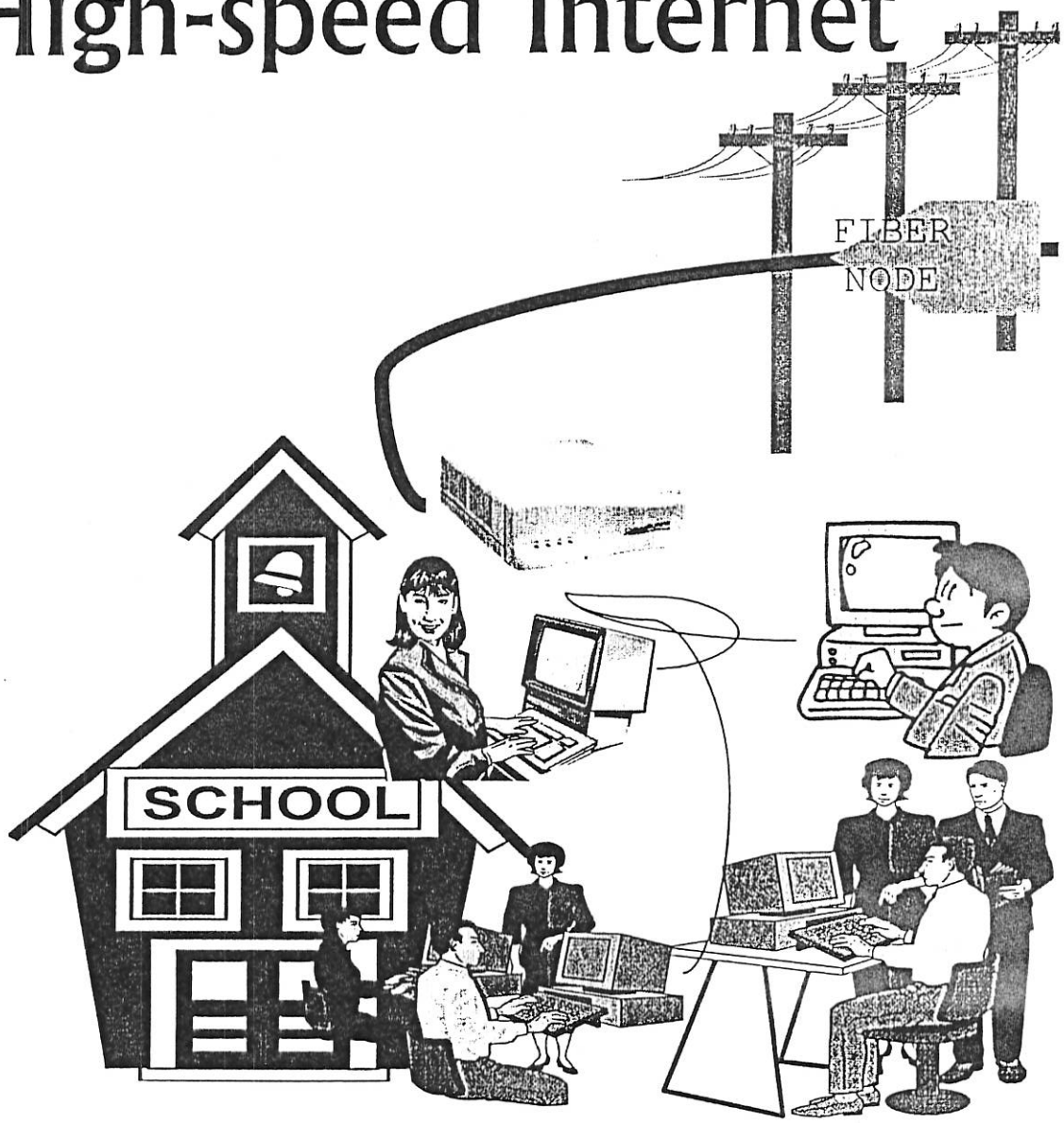
CABLES NEW BANDWIDTH CARRIES HUGE AMOUNTS OF VIDEO AND DATA

Multimedia Cablevision

Affordable High-speed Internet

With advanced *Cable Modem* technology, we provide high bandwidth Internet connections to a large number of Schools, Libraries and City Buildings in the state

Typically $0 installation charge. Lower monthly cost/higher bandwidth.



Multimedia Cablevision

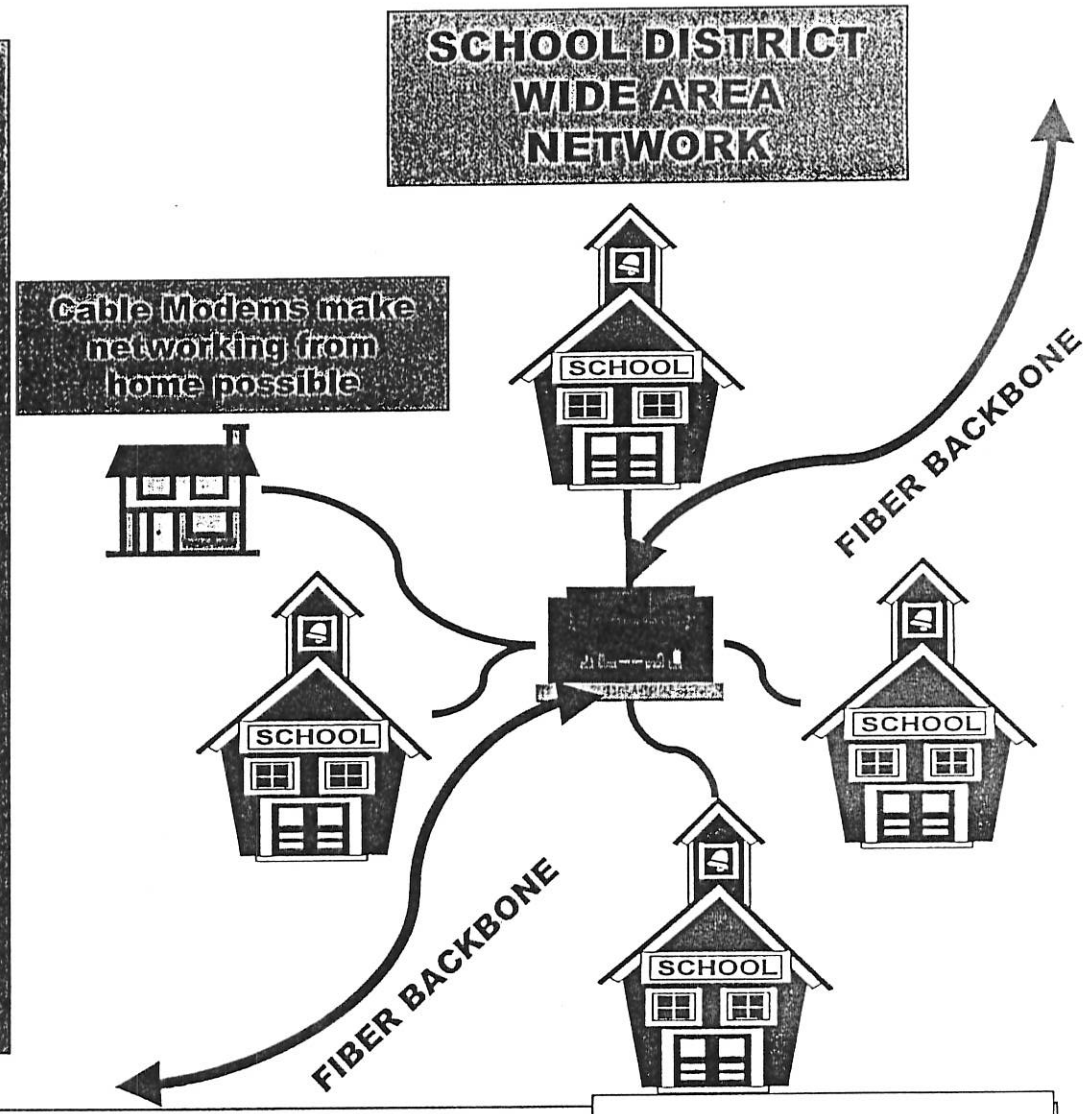
Affordable Wide Area Networks

11-15

Using Fiber Optics and Cable Modem technology we provide high bandwidth Wide Area Network Connections for many Schools Districts in the state

10 Mbps to 100 Mbps Networks.

Lower Price / Higher bandwidth, Winning Bids over any other Technology



Multimedia Cablevision

Wide Area Networks

11-16

GREAT BEND SCHOOLS

5 SITE CABLE MODEM WAN
with 2 residential

MCPHERSON SCHOOLS

9 SITE CABLE MODEM WAN
with 4 residential

NEWTON PUBLIC SCHOOLS

10 SITE CABLE MODEM WAN

ELDORADO PUBLIC SCHOOLS

8 SITE CABLE MODEM WAN

Multimedia Cablevision

Wide Area Networks

WICHITA PUBLIC SCHOOLS

12 SITE FIBER NETWORK

PITTSBURG SCHOOL DISTRICT

5 SITE FIBER NETWORK

WASHBURN SCHOOL DISTRICT

9 SITE FIBER NETWORK

HOISINGTON SCHOOLS

5 SITE CABLE MODEM WAN

Wide Area Networks

BARTON COUNTY CC
2 SITE CABLE MODEM WAN

HUTCHINSON COUNTY CC
2 SITE FIBER NETWORK

DERBY CITY HALL TO
SEDGWICK COUNTY
2 SITE FIBER NETWORK

WICHITA STATE UNIVERSITY
2 SITE FIBER NETWORK

Multimedia Cablevision

Wide Area Networks

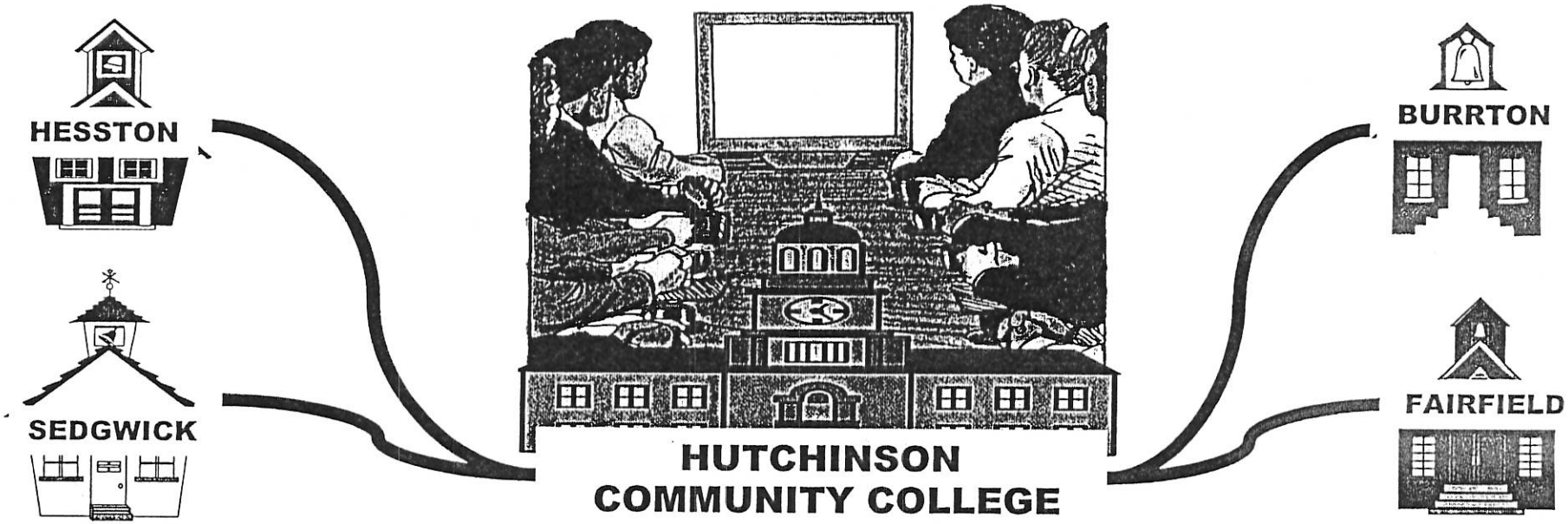
WINFIELD KS
COWLEY COUNTY CC
3 SITE FIBER NETWORK

HUTCHINSON CITY
5 SITE CABLE MODEM NETWORK

MANY OTHERS IN PROGRESS

11-20

We provide Interactive Distance Learning Technology



Using Fiber Optic and Cable Television Video Laser Technology we provide Interactive Distance Learning Systems. Connection to Fairfield provided through a Partnership with Cable and Rural Telephone

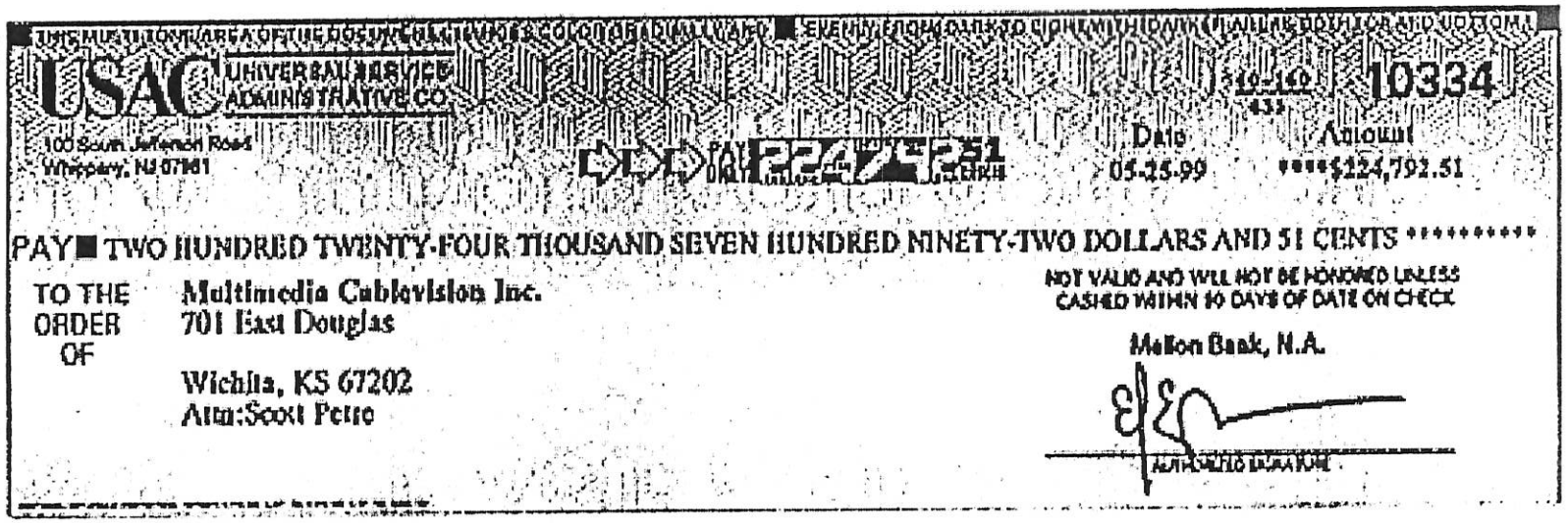
Multimedia Cablevision

Federal Universal Service Fund

11-21

1998 Federal Universal Service Fund

In 1998 we collected for the Wichita Public Schools one of the largest Federal USF checks in the state of Kansas in the amount of $224,792.51



USAC UNIVERSAL SERVICE ADMINISTRATIVE CO.
100 South Jefferson Road
Whippany, NJ 07981

10-10 433 10334

Date 05-25-99

Amount ****$224,792.51

PAY ■ TWO HUNDRED TWENTY-FOUR THOUSAND SEVEN HUNDRED NINETY-TWO DOLLARS AND 51 CENTS **********

TO THE ORDER OF
Multimedia Cablevision Inc.
701 East Douglas
Wichita, KS 67202
Attn:Scott Petro

NOT VALID AND WILL NOT BE HONORED UNLESS CASHED WITHIN 90 DAYS OF DATE ON CHECK

Mellon Bank, N.A.

AUTHORIZED SIGNATURE

⑈010334⑈ ⑆043901601⑆ ·045⑈7406⑈

Multimedia Cablevision

11-22

Federal Universal Service Fund

1999 Federal Universal Service Fund

In 1999 here is a list of Schools who the Funding percentage that the Federal Government is committing to for Technology in Schools.

Fairfield USD 310:	**70%**
Pittsburg USD 250:	**70%**
Hoisington USD 431:	**70%**
Great Bend USD 428:	**68%**
El Dorado USD 490:	**63%**
McPherson USD418:	**57%**
Newton USD 373:	**53%**
Burrton USD 369:	**50%**

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