

SCOMM

88:4

NOTICE: PUBLIC HEARING

STATE OF ALASKA
HOUSE OF REPRESENTATIVES
TELECOMMUNICATIONS TASK FORCE

PURPOSE: RECEIVE TECHNICAL BRIEFING AND PUBLIC COMMENT
ON PROPOSALS, CURRENTLY BEFORE THE FEDERAL
COMMUNICATIONS COMMISSION/JOINT BOARD, TO
RESTRUCTURE THE ALASKA TELECOMMUNICATIONS
INDUSTRY

WHERE: ANCHORAGE LEGISLATIVE INFORMATION OFFICE
716 WEST 4TH, SUITE 200
(TO BE TELECONFERENCED TO SELECTED SITES)

WHEN: FRIDAY, AUGUST 27, 1993
9:00 A.M. TO 6:00 P.M.

CONTACT: ROYCE WELLER, LEGISLATIVE AIDE
REPRESENTATIVE BILL HUDSON
(907) 465-6826

HEARING AGENDA:

9:00 A.M. - 11:00 A.M.	JOINT BOARD STAFF BRIEFING ON PROPOSALS
11:00 A.M. - 12:00 NOON	STATE OF ALASKA BRIEFING ON POSITION AND FILINGS
12:00 NOON - 1:00 P.M.	BREAK
1:00 P.M. - 2:00 P.M.	INDUSTRY PRESENTATIONS (TEN MINUTE LIMIT)
3:00 P.M. - 4:30 P.M.	PUBLIC TESTIMONY (THREE MINUTE LIMIT)
4:30 P.M. - 6:00 P.M.	INDUSTRY PANEL/ COMMITTEE QUESTIONS

Alaska Federation of Natives, Inc.

Testimony for State Telecommunications Hearing

August 27, 1993

My name is Julie Kitka and I am President of the Alaska Federation of Natives (AFN). AFN, as you may already know, is a statewide Native organization formed in 1966 to represent Alaska's 85,000+ Eskimos, Indians, and Aleuts on concerns which are statewide in nature.

AFN has two primary concerns in the current discussions on the Alaska Federal-State Joint Board of the Federal Communications Commission: (1) affordability; and (2) guaranteed universal access.

The statewide Native community would like to see that affordable communications for all Alaskans, and especially for rural Alaskans continue and unmet needs be addressed.

The key to the maintenance of the telecommunications system that has developed in Alaska is affordability. People who live in rural Alaska are extremely vulnerable to changes in government policies and appropriations policy. They live on the razor's edge, so to speak. Changes in government policy and funding are felt quickly and on a

community-wide basis, not absorbed only by a small sector of the population, as is often the case in large cities.

Let me cite some examples which I'm sure will be of interest to you and help convey the importance of the state continuing to demand rural needs be addressed in detail by either proposal before the Joint Board.

The high cost of living in rural Alaska is well documented in many state and federal reports, as well as in AFN's Report on the Status of Alaska Natives. In the AFN report it was shown that the overall cost of living in villages in 1990 was between 126 and 145 percent higher than in Anchorage, while the cost of certain essentials like fuel were an 476% higher than in Anchorage.

The annual cash incomes of Alaska Natives are substantially below those of non-Natives, due to lack of adequate wage employment. This contrast appears not only between villages and cities, but within most communities as well. Native people hold a significantly lower percentage of the available jobs in any given community than the percentage they represent of the total workforce.

The higher the cost of living and the less cash income available to rural families mean that less income is available to obtain services such as telephone services.

According to the 1990 US Census, nationally,

(1) almost five million of the country's 92 million housing units lack basic telephone service.

(2) the ethnic breakdown of households which lack basic telephone service include:

5% White households

15% Black and Hispanic households

20% Native American households

(3) Two-thirds of the families below the poverty level do not have a home phone.

(4) The most significant cause of phone gaps in rural America is poverty.

The color coded map which accompanied the June, 1993 article in the Atlantic Monthly graphically illustrates the percentage of occupied housing units with no telephone. The needs of rural Alaska are clearly illustrated in this map . (Attached is a copy of the map)

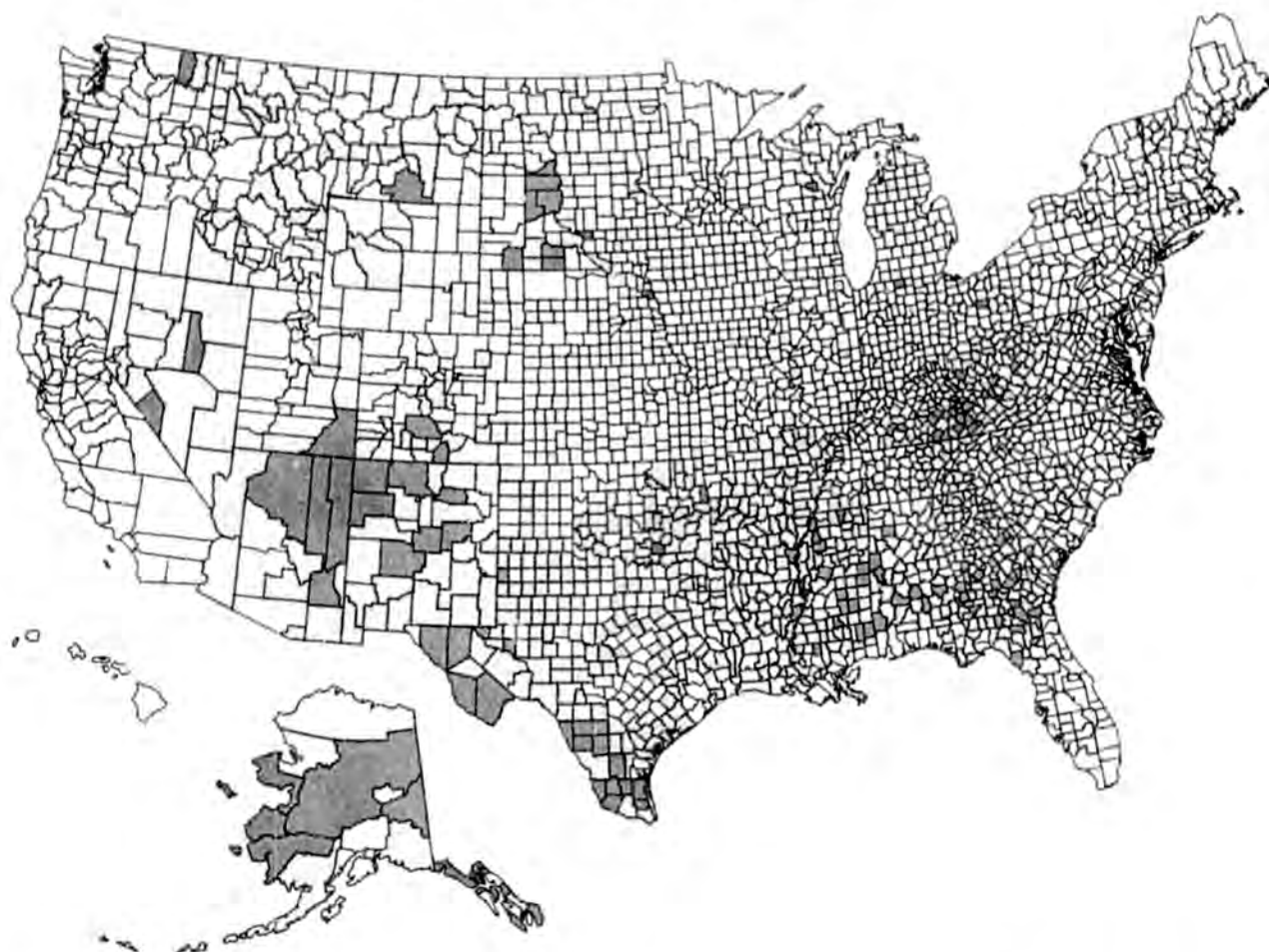
I would suggest the most significant cause of phone gaps in rural Alaska is also poverty and our small populations.

At this time I would like to commend the Governor and his representatives for continuing to strongly support and advocate for affordability and universal access and for demanding that rural needs are fully addressed in formal documents which have accountability.

I believe the Governor and I share this common ground and urge this Legislative Committee to support state efforts to press for rural needs to be fully included in any expansion of services, new technologies, and investments.

AT LAST COUNT

NO-PHONE HOMES



IN THIS ERA of cellular telephones, modems, and fax machines there are surprisingly large gaps in the nation's telecommunications network. According to the 1990 U.S. Census, almost five million of the country's 92 million housing units lack basic telephone service. Overall, only five percent of white households lack a phone, whereas 15 percent of black and Hispanic and 20 percent of Native American households lack one.

In most housing units without telephones, a telephone is an unaffordable luxury; two thirds of the families below the poverty line do not have a home phone. A majority of the homes without telephones are in urban areas. Among the nation's hundred most populous counties, Bronx County, New York, contains the highest proportion of families without phone service (12.5 percent) and of families below the poverty line (26 percent).

While poor urban counties have the most phoneless homes in terms of absolute numbers, the percentage of phoneless homes is higher in rural areas. In some rural areas service is simply unavailable. For about 200,000 re-

motely situated houses, many of them in the Rocky Mountain states, stringing up wires would be either physically impossible or prohibitively expensive for the regional phone companies.

But as in urban areas, a far more significant cause of phone gaps in rural America is poverty. Even when poor families can afford basic service, they often cannot get a phone owing to bad credit ratings. Rural phone service is scarcest in Appalachia, which is home to many poor whites, and in areas with large minority populations, such as counties in the Southeast where African-Americans predominate, areas of the Southwest where Mexican-Americans are most concentrated, and Native American enclaves in Alaska, the Southwest, and the West Central states. In rural Apache County, Arizona, which has a large Navajo population, 60 percent of housing units have no phone.

Percentage of occupied housing units with no telephone

- Less than 10 percent
- 10 to 19.9 percent
- 20 percent or more

Source: 1990 U.S. Census

—Rodger Doyle

Steve CONN - AK PIRG -

Matthe Steward - AL Adams -

follow thru on commitments
more firm assurance that satellite
will be maintained - etc.

Larry Pearson -

Mike Pocaro -

Need more hearings in Rural Alaska

Julie Kitha .

Concern - Affordability
- Guaranteed Universal Access.

fuel 476% higher!

* STATE take a new look at a state satellite
distance education.

John Shively -

NATIVE Concerned about a loss of

services -

Pat Abney - time to move ahead

JOHN Ayers - ACASCOM

→ incentives to reduce costs +
upgrade.

→ Duplication of cable - switcher -
etc.

→ Business for 3 or more

Kay Brown -

Brian Porter -

Panel -
all support Gars
Recomm's.

Gail Perry

Competition - But to date -

Jack Rymer -
the

ATT - Doug Wizeck

? Subsidy - costs are greater than revenues -

urban subscribers Rural - normal

integrated rates are nat'l policy -

— No. of carriers -

1990 census - Wyoming - 40 long dist. carriers.
4 mains.

ATT - Study - Johnson.

What happens to ALASKAN Economy.
JOBS - etc.

need a copy of
your analysis -

IF.

Satellite - Replacement

Cheaper over how long - Volume - more calls
reduced costs

Total Billed Revenue for Alaska = \$300 mil.
Bills from Alabam only -

DANA -

GCI filed Plan to serve
all of Alaska! T.E.S.

DANA TINDALL - GCI -
- INTER + INTRA -

Other ways: - make AT+T responsible -

AT+T proposal
J. Board Recomm. (tent)

ASSURANCE → ? — How do we guarantee -
JNT Soc. Agreement no longer viable.

Replication - duplication

What do we know about the products of the TSA?

How do you read the Governors filings -

— Dominant Carrier —

GCI favors JNT Board Recomm.'s

Give us some basis for this 3 carriers
can survive

— Investments on hold - technological platforms
not going forward !! -

JOHN KATZ -

↔ impact ON ALASKANS - Rural concerns:

Rate Integration

How do we

JT. BOARD → transition period too long -

→ avoid stranded investment - Alascom!

→ AT&T - NO transition period!
too skeletal -

concerns in proposal between
AT&T - Alascom - GOI

APUC - consider some of the INTRASTATE

ALASKA Funds Administration

JOHN - CAN we receive Any pertinent Analysis -
studies that form a basis for
adopting any

Rep. Brown -

inc. efficiencies -
→ economic climate in Ahs.

Long term needs even from
state - improved health
care - Public Safety

- how much interest in
with state policy makers
to determine.

APUC = ^{more} \$ hearings in Ahs.

Susan - Guarantee's that
service will be provided
if Alhcom departs -

1972 - FCC - RATE INTEGRATION - FCC - ALASCOM & AT&T
Agreed To JOINT SUC. AGREEMENT.

AT&T PAY ALASCOM'S COSTS OF INTERSTATE
SERVICE - IN RETURN - RECEIVED ALASCOM'S
REVENUES!

Resulted in ^d80-100 mil SUBSIDY

ALASCOM - DOMINANT CARRIER STATUS - PLACES STRONG
REGULATORY CONTROLS - DEMANDS AVERAGED PRICING.

? WITH THE JSA - INCENTIVES TO CONTROL COSTS -
PASS ON TO CONSUMERS.

WHO OVERSITES IT ALL.

RELATION - APUC/FCC - AUTHORITY.

TODAY - Aug. 27TH Amd. LIO.

Tele Comm. Task Force -
Members Rep. HARVEY OLBERG - SANDY PROOST
" MIKE WATKINS.

Attng: Rep. BRUCE PATR
KAY BROWN

Former member RAL BARDEN
Former Comm. CHAIR - MIC WATKINS.

* Rep. DAVIS FINKELSTEIN

Rate Integration - Calls To & From ALASKA to cost comp'bl.
to similar distance in lower 48.

Universal Service

ALASCOM - At+ = JOINT Svc. Agreement

At+T pays Alascom's costs of INTERST. Svc.

Formula permits Alascom to charge 86% of key
investments in system - interstate

CARRIER of LAST Resort?

At+T & ALASCOM only 2 CARRIER of LAST Resort in
USA.

explain the implication - Regulatory.

must provide service at Averaged or Rate
integrated prices!

With the \$80-100 mil At+T subsidy why would Alascom
control costs or try to reduce rates?

SUSAN

Q. Why create Jnt Bd.

Q. What Process

Q. Prop. Being considered

Q. From Here!

who to trust.

Guaranteed serv. over time.

Relationships between
APUC - FCC

certified by
whom.

- Cost Containment -
- Quality Assurance

who would approve
Alaskans Rate.

- extensive data -
- demographics

Alaskans - File Plan if
existing.

Master Plan compared
to Joint Board Proposal

75%

Accelerated Cost Recovery
mechanism.

Book Value?

hearings in Alaska -

Authority - can you or FCC force this
plan.

QUESTIONS FOR THE BOARD:

The Joint Board has identified five objectives that will guide its efforts to create a "new market structure for the provision of interstate telecommunications service between Alaska and the lower 48 and Hawaii." The five objectives are (pg 5, Joint Board TR):

1. Preservation of Universal Service;
2. Continuation of Rate Integration;
3. Jurisdictional Revenue Requirement Neutrality;
4. Market Based Competition entry; and
5. Increased Efficiency.

Define each one of these objectives.

Define the term "Dominate Carrier". As to your proposal, what are the implications, for Alascom and AT&T, for being identified as Dominate Carriers?

What specific steps has the Board taken, in its Tentative Recommendation, to protect or promote objective #1 (universal service)?

The State of Alaska has submitted two filings (6/28/93 and 7/12/93), regarding the Board's TR. To what extent have the issues and recommendations, raised by the state, been considered? ✓

Specifically, have you considered the State's recommendation that you "remove the requirement that Alascom charge geographically average rates for its carrier service"? (Both the State and AT&T appear to agree on this point - "rates for Alascom's services ... be based upon the direct costs of providing them." pg. 6-8, State of Alaska; 6/28/93)

QUESTIONS FOR AT&T:

Many Alaskans are concerned that a restructuring of the market will lead to increased intrastate rates, and may sacrifice universal service.

As to Universal Service:

Please elaborate on your commitment that "if the Consumer Benefit Plan is adopted and Alascom seeks to abandon its Bush monopoly, AT&T would be willing to assume Alascom's obligation and buy Alascom's existing Bush facilities at their net book value." (pg 15, AT&T's Comments; 6/28/93).

If the Board's TR proposal is adopted, instead of you Consumer Benefit Plan, is the offer above still good; or is it withdrawn?

As to Intrastate Rate Increases:

AT&T has noted, in its Comments to the Board, that its Plan would guard against intrastate rate increases. Please elaborate on you following statement:

Experience in every other state has shown that such competition, together with the efficiencies resulting from the introduction of new technology, drive costs and prices down, rather than up. Thus, there is no reason to expect that prices would ever rise as a result of adoption of the Consumer Benefit Plan.

(Pg 25, AT&T's Comments; 6/28/93)

One critical component of the Board's proposal is "accelerated cost recovery." This recommendation is intended to greatly improve Alascom's future competitiveness. AT&T has commented, however, that this recommendation, by the Board, is beyond the authority of the FCC.

(Pg. 19, AT&T's Comments; 6/28/93)

Would AT&T like to expand its comments, on this position?

As to geographically averaged rates, AT&T has recommended that this objective may best be achieved through the "establishment of a separate study area covering Alascom's monopoly service to Bush locations". (Pg. 30, AT&T's Comments; 6/28/93).

Could AT&T further clarify its recommendation?

QUESTIONS FOR GCI:

Please expand upon your comments that:

"GCI reiterates, as it has said before, that it will acquire from Alascom, at net book value, the Alascom facilities at any Bush location which Alascom proposes to abandon and will serve that location through GCI network without insisting upon monopoly rights, or any form of cost pooling or forced subsidization by others.

(Pg 6, Comments of GCI on the TR; 6/28/93)

Is GCI saying that it could provide (after a transition period) all the services, now provided by Alascom, without a subsidy?

How do GCI's costs compare with Alascom's? (Pg 8, Comments of GCI on the TR; 6/28/93).

QUESTIONS FOR STATE OF ALASKA:

The state of Alaska has commended the Joint Board for "crafting a comprehensive solution to Alaska interstate telecommunications market structure issues. (pg. 1, Comments of The State of Alaska; 6/28/93). Furthermore, it has stated that, "[t]he difficulty of the issues presented, however, does not justify delay in resolving them. (pg. 5, reply comments, 7/12/93). At the same time, the State is recommending, in its comments, specific changes to the proposals.

While it is obvious that the State would like its recommendations to be adopted, it is less clear as to what its position is if they are not. Is

the State willing to support either proposal, if left unamended? If not, where does the State draw the line?

The State has made it quite clear that one of its primary concerns, with market restructuring, is the potential for "upward pressures on intrastate rates ... through jurisdictional cost shifts." While the Board's proposal advocates an extended market transition period (7 years), the State is recommending a shortened period (5 years).
(pg. 9, Reply Comments of State of Alaska; 7/12/93)

What does the State hope to accomplish by limiting the transition period?

QUESTIONS FOR ALASCOM:

In its Tentative Recommendation, the Board noted that "[m]ost parties in this proceeding have opposed the long term continuation of the JSA, and even Alascom has participated with AT&T (Master Agreement, filed in 1992) in an attempt to propose an alternate to the JSA". (Pg. 9, TR; 5/17/93).

What makes the Board's current proposal so different from your proposed 1992 Master Agreement?

Joint Board Questions

1. With respect to the Tentative Recommendation which the Joint Board issued in May, 1993, do you have any studies or analyses which demonstrates the effects of adopting your proposal on:
 - (a) intrastate rates and services for the next five to ten years (roughly 1993 -2001);
 - (b) the range and availability of private line and other specialized services, and their rates, for the same period?

If you do not have such studies and projections, could you please discuss with us why you felt such information was unnecessary to your decision-making and recommendation?

If you do have such information and materials, would you please provide a copy to the Task Force?

If you have such information, but will not supply it to the Task Force, would you please discuss with us why, particularly since at least some of the Joint Board's work appears to have been funded with State appropriations?

If you believe there is some legal barrier or restraint to providing this information to us, could you provide us with a legal opinion supporting your position?

2. The Task Force understands that State money was utilized to purchase the services of Overland Consultants in connection with an analysis of interstate matters. Is this correct?

Could you provide copies of the Overland studies and workpapers to the Task Force?

If not, would you discuss with us why this cannot be done?

What was the scope of the work done by Overland Consultant for the Joint Board?

Did Overland Consultants do any work for the Joint Board other than in connection with last year's Master Agreement between AT&T and Alascom?

If so, what was the nature of that work, and may we have a copy of it?

If not, why didn't the Joint Board utilize Overland Consultants in reviewing its own proposals, if it used Overland to review the Alascom/AT&T contract?

Was any additional work done by any individual, company, or entity for the Joint Board or Ms. Knowles or Ms. Kenyon in connection with the Joint Board proceeding?

If so, would you provide copies to the Task Force?

If not, would you discuss with us why such information cannot be provided to us?

3. Have you performed or reviewed any studies or analysis which projects or discusses the anticipated effects of adopting the Joint Board proposal on employment in Alaska?

Have you done any such studies relating to the effects of the Joint Board proposal on the infrastructure of Alaska -- for example, concerning the effects on health care, education, governmental and business activities, and so on?

If so, what did those studies show, and may we have a copy of them?

If you do not have such studies, would you please discuss why you believe such information is not relevant to your decision?

If you do have such studies, but will not provide them, would you please discuss with us why they cannot be made available to the Task Force?

4. The Task Force is aware that the Joint Board proceeding has gone on for many years. Is there any termination date, under law or FCC regulation, by which a decision must be made?

The Task Force is aware that another Joint Board proceeding (No. 80-286) has been going on as long as or even longer than this one. Assuming that all parties want an end to this matter at some point, is there a reason to arrive at a decision before October 1? December 1? January 1?

Where and why would you draw the line on a decision date in this proceeding?

Alascom Questions

1. Alascom has proposed modifications to the Joint Board proposal. Does this mean Alascom is willing to abandon the current arrangement with AT&T?

If those proposed changes were adopted, would Alascom support the Joint Board proposal?

2. GCI has accused Alascom of wanting to indefinitely forestall the Joint Board proceedings? Is this Alascom's position?

If Alascom believes an end to these proceedings is appropriate, what is the basis of its position and what would be its conditions?

3. Alascom has presented information to the FCC which projects the effects of the Joint Board proposal on future intrastate rates. Does Alascom have any studies or analyses to support its FCC projections?

If so, would you provide copies to the Task Force? (If you won't provide copies, please discuss why not.)

If Alascom has done no studies, what is the basis of its FCC presentations?

4. The Task Force understands that Alascom last year discussed with the State of Alaska a proposal for capping intrastate rates, and the possibility of future intrastate rate decreases. Was this proposal ever reduced to writing? If so, would you provide copies to the Task Force? (If not, why not?)

What are the differences, if any, between your intrastate rate proposals then and AT&T's intrastate rate guarantees now?

5. AT&T has characterized Alascom's network as obsolete. What is Alascom's response to this allegation?

Has Alascom done any analysis of AT&T's proposed network for Alaska service? If so, would you please provide copies to the Task Force? (If not, why not?)

AT&T Questions

1. AT&T has for years claimed that Alaska service has cost it scores of millions of dollars annually. The Task Force has not seen any AT&T studies filed with either the FCC or the APUC which prove this point. Has AT&T done any real separations studies -- including all costs of service in its lower-48 network -- showing the specific costs of Alaskan service?

If so, may we have a copy of those studies? If not, why not?

2. Has AT&T developed a draft application to the APUC for intrastate service? If so, would you please provide a copy to the Task Force? (If you won't, why not?)

If AT&T has not developed such a draft, when do you expect to do so? Will you provide a copy to the Task Force at that time?

AT&T has told the FCC that it has a study demonstrating that under its proposal, intrastate rates will result in a profitable business for AT&T. Would you please provide the Task Force with a copy of that study? (If not, why not, etc.?)

If AT&T has no draft APUC application and no intrastate studies, how can it be so confident of its proposal?

3. AT&T has proposed \$240 million in investment for Alaska, but none of this apparently will occur in the Bush? Why is AT&T unwilling to invest in the Bush?

If Alascom's system is antiquated, as AT&T has maintained, why is AT&T willing to use Alascom's equipment, but only in the Bush?

AT&T has said it will assume Alascom's obligation to serve the Bush in the future. Does this included providing a satellite in about 2001, dedicated to Alaskan service? If not, why not and what is AT&T's alternative proposal?

- Key
4. AT&T has said that if its proposals are adopted, it will not be a dominant carrier in either the interstate or intrastate markets for Alaskan service. Would you please provide the Task Force with a legal memorandum setting out your arguments?

How would AT&T envision its proposal concerning lower intrastate rates to be enforced, if AT&T takes the position that it is not a dominant carrier under state law and regulation?

5. Alascom has indicated its belief that AT&T's proposal to underprice GCI and Alascom for intrastate long distance for five years may be unlawful, and therefore unenforceable. Assuming merely for the sake of argument that this is true, does AT&T have any alternative proposal to offer Alaskans which might avoid a legal fight and be enforceable?
6. If the Joint Board proposal is adopted, and Alascom's costs are reduced through an accelerated cost recovery program (ACR), has AT&T done any studies showing the reduction in costs AT&T will derive if it uses Alascom's reduced-cost facilities in the future?

If so, would you provide a copy of any such materials to the Task Force? (If you won't provide copies, why not?)

If you haven't done any such studies, why not?

If you have done no studies, how does AT&T know it won't save money on the back end of the transition period?

Didn't you (Wilcox) tell the Joint Board on July 1 that AT&T was trying hard to figure out some way to prepay and then recover its expenses, as a means of solving these issues?

State of Alaska

1. Would you provide a copy of all studies, analyses, and so on relating to the Joint Board and Alaska market issues done by your consultants, Ernst & Young (and any other consultants to the State) to the Task Force?

If you have no such studies, please discuss with us why you feel such studies were not required?

If you do have studies but will not or cannot provide them to the Task Force, please indicate why.

2. The State has recommended several changes to the Joint Board proposal. Could you please discuss with the Task Force how important you feel these changes are, in terms of their future effects on Alaskan rates and service?

3. Does the State believe that a deadline exists for deciding the Joint Board issues? If so, what is that deadline and what is the source of that deadline?

If no deadline exists, and given that the State has proposed changes to the Joint Board plan, how would the State recommend the Joint Board and FCC proceed from here?

John R. Ayers
Executive Vice President
and General Manager



August 18, 1993

Mr. Clifford Gerhart
Editor
Alaska Business Monthly
P. O. Box 241288
Anchorage, AK 99524-9989

Dear Mr. Gerhart:

Your article on Alaskan telecommunications (August, 1993, p. 18) ascribes the following quote to me:

"We're prepared to go forward with exactly what the Joint Board is saying, as long as there is a reasonable transition period."

The quote is accurate, but the context in which it was made is not quite as accurately reflected in the article. The length of the transition period is important, in order to avoid adverse effects on intrastate rates and unnecessary burdens on our customers and employees. And Alascom does agree with the transition period which the Joint Board has proposed.

But it is equally important to the public interest that other elements of the Joint Board proposal be adequate to achieve the public interest goals already identified by the Joint Board. Accelerated cost recovery, or the "buy down" referred to in your article, is a critical element concerning which the Joint Board has yet to speak. Alascom believes that since AT&T proposes to increase Alaskan telecommunications costs with \$230 million in unnecessary, duplicative investment, AT&T should first be required to reduce existing Alaska system investment by a similar amount. Otherwise, in the long term, Alaskan consumers face the prospect of paying needlessly, for needless expense.

Mr. Clifford Gerhart

Page 2

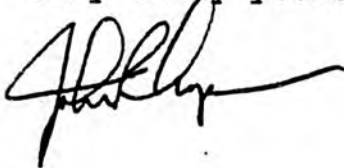
August 18, 1993

The Joint Board's plan adopts the principle of accelerated cost recovery, but does not specify the amount of such recovery. Other particulars remain to be determined, as well. Necessarily, then, Alascom cannot yet "go forward with exactly what the Joint Board is saying," since on certain issues it has said nothing. We believe the interests of Alaskan consumers will incline the Joint Board to adopt our recommendations on such particulars. Alascom would welcome the chance to supply ~~information concerning~~ its positions -- which are fully disclosed in the public record -- on these or other issues involved in the Joint Board proceeding; please direct inquiries to:

Tom Jensen
Administrator, External Affairs
210 E. Bluff Drive
Anchorage, AK 99501
Phone: 264-7717

Thank you for this opportunity to add to your very comprehensive article.

Very truly yours,



THE ALASKA CONSUMER BENEFIT PLAN

AT&T's telecommunications plan for Alaska lowers long distance rates, builds new infrastructure, and guarantees Bush service.

The Consumer Benefit Plan is:

Customer focused

- Lowers rates for in-state and out-of-state long distance calls;
- Improves service and reliability.

Competition driven

- Lowers costs;
- Stimulates economic investment.

The Consumer Benefit Plan:

Lowers in-state long distance rates

- Saves customers \$25 million projected in real terms over five years;
- Meets or beats present rates of anyone else;
- Implements a 5-year price stability plan;
- Lowers Bush rates average of 7%;
- Lowers in-state rates overall average of 4%.

Lowers out-of-state long distance rates

- Lowers rates for all calls over 3000 miles from 17-32%;
- Prices all out-of-state calls no higher than the longest calls within the Lower 48 (Anchorage, Barrow or any other Alaska location same rate as Seattle to Washington, DC.);
- Adds reductions of AT&T volume discount calling plans.

Creates new investment, services and jobs

- Invests \$180 million in network construction;
- Builds state-of-the-art submarine cable and switching facilities that are more reliable and expandable;
- Deploys advanced technology suitable for future computer and interactive video applications;
- Brings services and discount calling plans available in all other states;
- Locates in Alaska customer service, sales, public relations, government affairs, maintenance, and management jobs.

Guarantees Bush service

- Lowers in- and out-of-state long distance rates;
 - Assures continuing service quality;
 - Creates rural advisory board;
 - Guarantees responsibility to serve the Bush.
- If necessary...
- Purchases all Bush facilities at net book value and operates them;
 - Replaces satellite and other facilities when needed;
 - Maintains service at affordable rates.

Provides revenue for Alascom

- Leases switches for at least one year;
- Leases cable for at least three years;
- Leases microwave facilities indefinitely;
- Reimburses actual expense of Bush service;
- Supports continuing profitability of Alaska's telecommunications industry.

The Alaska Consumer Benefit Plan will work. Don't put lower rates and new investment on hold when Alaska can have them now.

OPEN LETTER TO ALASKA

AT&T is listening to Alaskans.

We understand that more than anywhere else the telephone is your lifeline, especially in the Bush.

We also are aware that your in-state long distance rates are considerably higher than your out-of-state rates. In fact, your monthly in-state bill is much larger than your out-of-state one. And that results in a large portion of your limited discretionary income being consumed by phone bills.

We have found you also are concerned about the future of your economy. Life can be challenging here and the economy more seasonal and less stable. You want to meet these demands by having the ability to attract investment and create good year-round jobs.

You also want a telecommunications system comparable to anywhere else with everyone encouraged to keep it that way, too. That's important to Alaska, with the world becoming a global economy, businesses are more mobile and want to locate where operating costs are attractive.

Of course you're concerned when anyone proposes changes to Alaska telecommunications. When rates are high and someone claims more costs may be shifted to in-state phone service, or subsidies may be removed that are supposed to lower those rates, you want to know how you may be affected. You hope any changes will lower in-state rates today and assure affordable rates in the future.

That's specifically why AT&T developed the Alaska Consumer Benefit Plan, to lower in-state rates and assure better guarantees of universal service.

After years of deliberations and consideration of many other proposals, we're convinced we have a plan that will work because it:

- delivers lower long distance rates both in and out of the state;
- builds new state of the art infrastructure for Alaska;
- guarantees the responsibility to serve the Bush.

AT&T's lower statewide long distance rates and price stability should generate reductions for all Alaskans totaling at least \$25 million in real terms over five years. Bush rates will be 7% lower and all calls over 455 miles will be priced the same. And for the first time, all out-of-state calls from Alaska will be priced no higher than the longest calls within the Lower 48. For example, Anchorage, Barrow, or any other Alaska location will have the same rate as Seattle to call Washington, DC. Together with the added reductions of AT&T discount calling plans that are already available in the Lower 48, Alaska finally will be on a more equal footing with other states.

At the same time AT&T will invest \$180 million to build new transmission and switching facilities for Alaska, including a submarine cable extending from the Lower 48 through Juneau to Anchorage. Our cable will be the most advanced technology available, more reliable and expandable, and suitable for new computer and interactive video applications. Alaska's connection to the global information economy will substantially improve with our state-of-the-art fiber optics.

Even though we believe the Alaska Consumer Benefit Plan is already a lot, we will do more. In the unlikely event that the present telephone company decides not to serve the Bush in the future, AT&T is committed to purchase those facilities at net book value and provide services at the same rates offered everywhere else in Alaska. AT&T understands this guarantee includes the obligation to replace the present satellite and other facilities, while maintaining service at affordable rates. 2001

But you want more than our lower rates, network, services, and guarantees, you want AT&T's presence with jobs. And that makes sense. To attract you as a customer we want you to be attracted to us. We know we work better for you when we are part of your community. That's why we locate customer service, sales, public relations, government affairs, maintenance, and management jobs in Alaska.

We also expect more than work from our employees. We count on them being active participants in their local communities. Our company values good citizenship.

Sure there's some opposition to our proposal. Some critics appear to fear competition and forget that competition makes all of us better. With competition we focus more on our customers than on ourselves. We are driven to win customers by lowering rates and improving service.

Unfortunately, those customer benefits are discouraged in Alaska today. Instead, Alaska long distance service is built on regulatory authority from an outdated monopoly era, a mandatory cost-plus arrangement, where one company maximizes its profit by maximizing its costs to another. Few investments in Alaska telecommunications make economic sense as long as this arrangement persists.

That's caused the industry to focus on "telephone wars" with legislators and regulators, where customers can be overlooked when legal maneuvers turn on politics, complex regulatory proceedings, and even lawsuits. Over time all Alaskans risk long distance service becoming much more costly and less desirable than in other states.

That's bad for Alaska and particularly hurts the more distant Bush. In today's economy, in-state long distance rates need to be reduced, not increased. At the same time, older equipment that is more costly to maintain may need to be replaced by more efficient technology. Now is the time to be sure Alaska gets lower statewide rates and new investment.

That's just what the Alaska Consumer Benefit Plan does. AT&T will spend millions to build infrastructure and create jobs. To win customers AT&T will meet or beat the present rates of anyone else. And sure, those companies will invest and lower rates, too.

Competition works, it works for Alaska, and it works for you.

###

LARRY PEARSON, Ph.D
2410 EAST 16TH AVENUE
ANCHORAGE, AK 99508

PHONE (907) 276-0829

Aug. 31, 1993

Representative Bill Hudson
Room 108
State Capitol
Juneau, Alaska 99801-1182

Dear Representative Hudson:

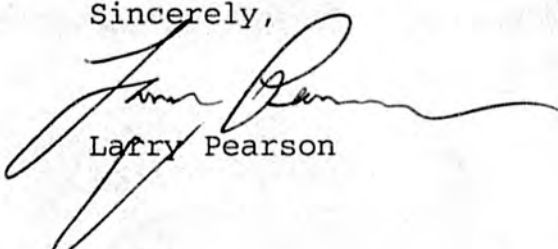
Thank you for giving me the opportunity to provide a written supplement to my testimony before your Select Committee on Telecommunications last Friday.

I regret missing by necessity part of the testimony that was presented but I was able to attend the Joint Board hearing in July and have read some of the documents submitted by those interested in the proceeding. I trust therefore that my comments will be relevant.

I was pleased to see that you are chairing this committee and was reassured by several of your statements during the hearing. I am concerned about several telecommunications proposals now apparently being considered by the state and hope that the Legislature will continue to assure that they are thoroughly reviewed.

Finally, I would appreciate copies of any written materials your committee is making available. The Department of Journalism and Public Communications at UAA is maintaining an archive of documents relating to telecommunications in Alaska and would like to include these materials. Thank you.

Sincerely,


Larry Pearson

**Testimony Submitted
to the
Alaska House Select Committee on Telecommunications
by
Larry Pearson, Ph.D.**

Mr. Chairman, members of the committee, thank you for letting me submit this testimony. By way of introduction, I have a Ph.D. in mass communication from the University of Minnesota with supporting work in management information systems. My interest and experience in computers and new communication technologies go back to the 1960s. For five years in the 1980s I was special consultant to the Alaska House Special Committee on Telecommunications. I am an associate professor of journalism and public communications at the University of Alaska Anchorage. I am presenting this information, however, as an individual, as a consumer of information.

I spend about three hours a day on the telephone. But very little of that time is spent in voice communication. Much of it instead is spent communicating with scholars and professionals and gathering information over a worldwide computer-based information network I receive on an ordinary telephone line in my office. The network is Internet which provides direct connections to many federal agencies and some international ones, to individuals at many businesses, and to scholars and students. This network provides information primarily in text form, but increasingly information in the form of graphics or audio files is becoming available. The first videoconference on Internet was held in Columbus, Ohio, this April. This "network of networks" dates back to the late 1960s but became widely used relatively recently, in the 1980s. It now links an estimated 12 million people in more than 30 countries, and was reportedly growing in 1991 at the rate of 20 percent a *month*.¹

Yesterday, for example, I located a 14-page federal report ["Fedline: A Feasibility Study of the Establishment and Operation of Fedworld, A Government-Wide Information Locator System at NTIS"], copied it into my computer account at UAA and then transmitted it - at his request - to the editor of the Anchorage Daily News. The entire operation took about 30 seconds. I also reviewed several press releases and transcripts sent to my computer by the White House. I use Internet to communicate with IBM's multimedia product development manager in Europe, Apple Corp.'s librarian in California, M.I.T. Media Lab faculty in Boston. On occasion I have used it for communications with colleagues in Finland, Australia, Canada and Russia.

Last week, using the ordinary phone line in my home, I dialed into a commercial computer service, America OnLine, which provided a connection to the Smithsonian museums in Washington, D.C. I looked through a selection of artworks and photographs and chose one that I was able to download to my home computer in eight minutes. The painting when I called it up on my computer screen was a sharper image than those I receive on my TV screen [a grayscale copy of the painting is attached].

All these activities represent relatively new uses of telecommunications that are supported by transmission technologies which have been in place for some time. I use

¹The figures come from an April 4, 1993, article by Houston Chronicle staff writer Joe Abernathy and a 1992 magazine article by Bruce Sterling.

these examples to make two points that I think are important as the government role in telecommunications is being considered. First,

- Demand for telecommunications is increasing. As entry of a new competitor is considered, it must be remembered that we are not talking about cutting a fixed market into smaller slices. Demand growth can be expected to offset to some extent the negative consequences of new competition for companies such as Alascom and GCI.

and second,

- The nature of demand is changing. I remain one of a small proportion of telephone service users who use it for transmission of textual and video information. But that proportion is growing rapidly. As more people become aware of the information available on Internet – from U.S. Supreme Court decisions, NASA satellite photos of the earth, texts of documents from many federal agencies, photos from a museum of photography in Los Angeles, earthquake information from a monitoring center in Washington state – a surge of demand growth can be expected.

It is also important to note that the competitive environment is changing both for local exchange carriers and for long-distance carriers. This has important implications for hearings such as this. The long-term issues are probably not so much whether increased competition can be allowed, but rather how quickly it will come and what can be done in a more competitive environment to ensure that important social values such as universal service and affordable access continue to be addressed.

In the local markets, cable and telephone companies have begun to compete (or collaborate) in the provision of the same services to customers. Both provide direct telecommunications links to households.² Since the Qube experiment in Ohio 15 years ago cable companies have experimented with interactive services. They can easily provide telephone or video telephone services. Similarly, as telephone companies improve the transmission capabilities of twisted pair copper wire and extend their fiber optic networks they are developing the capability of transmitting video programming. It does not seem unreasonable to expect that Prime Cable a few years from now might be competing with ATU. Like many other cable companies, it has an early advantage.

²See, for example, "Cable-Phone Link Is Promising Gamble: U.S. West Move Puts Pressure on Its Rivals," page B1, The Wall Street Journal, May 18, 1993. The first two paragraphs of the story say:

U.S. West Inc.'s move to acquire a 25.5% stake in Time Warner Inc.'s entertainment division sets a fire under local telephone competition.

By agreeing to help upgrade Time Warner's cable networks to carry interactive video, data and voice services, U.S. West gets a head start against its Baby Bell siblings, GTE Corp. and other local telephone companies in the race to carry ordinary voice conversations as well as new communications services.

Similarly, an article on page 20 of the Washington Post National Weekly edition, May 10-16, 1993, observes:

Cable television companies are modernizing their now one-way wires to let information flow in both directions and be routed to specific destinations. A leader is Tele-Communications Inc., the Denver-based cable giant, which last month announced plans to spend \$2 billion to upgrade its cable systems for data-intensive two-way services. Many cable networks too are looking hard at what it would take to carry telephone calls.

According to a 1992 cable industry report, Prime Cable already has fiber optic connections to 46,822 households in Anchorage.³

One concern expressed at the July 12 and August 27 hearings is that increased competition as represented by AT&T will not extend to rural Alaska – that rural Alaska, in fact, could suffer from AT&T's entry. However, within the 10-year span discussed in the Joint Board's ruling competition is quite likely to come to rural Alaska. It will come from companies not represented at this hearing, companies that have been working for several years now to develop a new form of telephonic communications.

Motorola heads a consortium of companies planning a worldwide personal communication network, the Iridium Project, that would benefit rural Alaska. Its plan is to launch 88 communication satellites into low-earth orbits. They would be 10 degrees apart, circling the earth at altitudes of 400 to 700 miles in polar orbits, and would support something much like a cellular network. You could be in a ranger cabin in the shadow of Mount McKinley and use this system to communicate with someone on the sundeck of a ship in the South Atlantic. This type of communication system, Motorola believes (as do the companies preparing to compete with it), is particularly well suited to regions such as Indonesia where development of land-based communication systems is particularly difficult. The original goal was to have the Iridium Project in operation by 1996; I believe that date has now been pushed back closer to the end of the decade. [It is interesting to note, too, that the small satellites needed for low earth orbit communication systems could be launched from the Poker Flat range and that there has been some discussion of this.]

Personal Communication Networks might not lower communication costs in rural Alaska but they might keep them from rising. More importantly, they might bring the state closer to the goal of universal service. In 1991, according to the University of Alaska's Institute for Social and Economic Research, 86 percent of Alaska residents had telephones. However, only about 60 percent of the state's most rural households had residential telephone service. A media census of three northwest Alaska villages conducted by UAA's Center for Information Technology in the fall of 1991 found that fewer than 80 percent of the households had telephones. It would appear from this that rural Alaska would benefit from

- 1.) increased competition,
- 2.) the spread of newer, more portable communication technologies and
- 3.) perhaps also from a rate structure that assisted those otherwise unable to afford a lifeline communication service.

I favor increased competition. I'm not sure AT&T's entry would be good for Alaska, but I'm inclined to think it would. I think the state and its citizens would benefit if there were more redundancy in our communication networks. Alascom's submission to the Joint Board [see especially page 26] indicates usage on its optical fiber cable has grown enough so that it is considering 3 to 1 compression by the middle of next year. A second cable to Anchorage would be valuable if demand does increase rapidly (did Alascom predict the volume of use to increase this quickly?) or if a problem arises with the first cable (there have been two breakages to date). Given the importance for state government operations of good communication links between Juneau and Anchorage, AT&T's proposal to extend a fiber optic cable to Juneau is very attractive.

³*Twenty First Century Television: Cable Television Delivers the Information Age*, Appendix I, NCTA Research & Policy Analysis Department, 1992.

That concludes the portion of my remarks addressed to the issues raised by the Joint Board's tentative recommendation. I would like to briefly refer to other telecommunication issues I hope this committee will address.

I understand that the state is considering major changes in its use of satellite communication. Directors of the Division of Information Services have said since the late 1980s that the state could use compression technologies to add channels to its leased transponder space. I applaud efforts to go forward in doing this. It seems important, however, for this committee to join the discussion of this important issue. Using satellite communications more efficiently is not the solution to all the telecommunications problems facing state agencies - although it can address some of them. The impacts on Alaskans of the proposed Satellite Interconnection Proposal need to be carefully considered. One of my concerns, for example, is the preservation of a regional presence, KYUK broadcasting in Bethel, as public broadcasting activities are consolidated. It is the only truly rural television station in Alaska and the only one that carries broadcasts in a Native language. A second concern is that one- and two-way broadcasting in distance education be recognized as only one of several alternatives. Other means of delivering materials include the University of Alaska Computer Network, audiographics as demonstrated by the University of Alaska Audiographics Project and even U.S. mail. Clearly, broadcasting has an important role in distance education, but the state should not focus on this as the one solution to distance education problems. It is not. It is expensive and, for some kinds of classes, relatively inefficient.

In the past, as members of this committee know, large sums of money have been invested in telecommunications technologies before the problems have been properly defined. The intent in creating the Telecommunications Information Council in 1987 was to lessen the likelihood that that would happen again. Recently, however, the TIC activities have been conducted by an executive committee. While that in itself is not a problem, it appears that - unless the law creating the TIC has recently been amended - some members of the executive committee are ineligible to serve on it. The law creating the TIC stipulates that Council members must be deputy commissioners or above. When lower-ranking members of the Cowper administration were designated as representatives of their departments, that administration was reminded of the law and the practice was stopped. It appears that another reminder is needed. The reason for that stipulation was to prevent the TIC from becoming a second Inter-agency Systems Committee. The revival of a committee that can assure laws passed by the legislature are followed and proper weight is given to important telecommunications issues is reassuring.

This concludes my testimony. Thank you for your attention.



©1993 Smithsonian Institution

Grayscale reproduction of 19th century painting, "Newsboy," in the Smithsonian Institution collection. Painting is one of a number of artworks and photographs that the Smithsonian has made available for distribution electronically. The full color version of this painting was downloaded on a commercial computer network, America OnLine. Transmission took eight minutes on an ordinary phone line using a computer with a 2400-baud modem.



SENATOR DAVE DONLEY
ALASKA STATE LEGISLATURE

August 24, 1993

Representative Bill Hudson
Chair
House Telecommunications Task Force
State Capitol
Juneau, Alaska 99801-1182

Dear Representative Hudson:

Long distance telephone service is a vital issue to the people of Alaska. I have long been and continue to be committed to all Alaskans having access to affordable, efficient, and competitive long distance telephone service. I strongly believe in open competition.

I also believe that A.P.U.C. Commissioner Knowles and the Joint Board have sought to protect the following five critical goals during the Board's proceedings:

1. Universal Service
2. Rate Integration
3. Increased Efficiency
4. Market Based Competition
5. Jurisdiction revenue requirement neutrality

For these reasons, I support the draft recommendations of the Federal/State Joint Board in Federal Communications Commission Docket CC83-1376. The joint board has studied this matter extensively and now I believe it is time to move on with the process without delay and finalize this plan.

Sincerely,

A handwritten signature in cursive script that reads "Dave Donley".

Senator Dave Donley

January-May: STATE CAPITOL • JUNEAU, AK • 99801-1182 • (907) 465-3892 • FAX: (907) 465-6595
June-December: 716 W. 4TH AVE. • STE. 430 • ANCHORAGE, AK • 99501 • (907) 258-8181 • FAX: (907) 258-5571

CO-CHAIR: Anchorage Caucus • MEMBER: Senate Judiciary Committee • Senate Resources Committee

STEVE FRANK

119 N. Cushman, Rm. 213
Fairbanks, Alaska 99701
(907) 452-3421

Alaska State Legislature



While in Juneau
P.O. Box V
Juneau, Alaska 99811
(907) 465-3709
Capitol Rm. 417

Senate

August 26, 1993

Alaska House of Representatives
Telecommunications Task Force
Juneau, Alaska 99811-1145

Dear Representatives Hudson, Olberg and Navarre,

I am writing to support the Federal Communication Commission (FCC) Federal/State Joint Board Proposal to restructure the Alaska Telecommunications Industry.

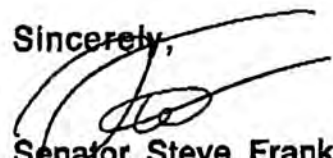
In 1990 the Alaska Legislature authorized competitive intrastate long distance telephone service (Chapter 93, SLA 1990). As the prime author of that law, I want to reiterate my strong belief that competition in the phone industry will benefit all Alaskans. The Joint Board proposal is a crucial step towards open competition as it will allow AT&T and other companies to offer service in Alaska.

Please do not be persuaded by the grave predictions of a disruption in the quality and price of the phone service that Alaskans receive. Similar predictions have been made every time this industry has been faced with competition; however, Alaska's experience since competition proves the critics false.

In my opinion, the real issue is the loss of a government sponsored monopoly. The sooner Alaskan long distance phone companies operate without subsidies, the quicker the efficiencies of competition will be realized.

Thank you for your consideration.

Sincerely,


Senator Steve Frank



WALTER J. HICKEL
GOVERNOR

STATE OF ALASKA
OFFICE OF THE GOVERNOR
WASHINGTON, D.C.

August 25, 1993

MEMORANDUM

TO: THE HONORABLE BILL HUDSON, Alaska Representative

FROM: *[Signature]* JOHN W. KATZ, Director of State/Federal Relations
and Special Counsel to the Governor

SUBJECT: OUTLINE OF TESTIMONY

Attached for your review is an outline of my testimony for Friday's hearing. Please feel free to circulate it as you deem appropriate.

I look forward to speaking with you and the other Committee members during your hearing.

Attachment

**OUTLINE OF TESTIMONY OF
JOHN W. KATZ,
DIRECTOR, STATE-FEDERAL RELATIONS AND
SPECIAL COUNSEL TO THE GOVERNOR**

Basic Principles

• The State's participation and the positions we have taken on telecommunications issues have been governed by certain basic principles which have consistently been followed:

• **Universal Service.** Any change in interstate telecommunications must promote (or at least not be contrary to) the availability at affordable rates of telecommunications services throughout Alaska, including the most rural parts of the State.

• **Intrastate Rate Protection.** Any change in interstate telecommunications must not shift costs to intrastate services thus causing upward pressures on intrastate rates.

• **Interstate Rate Integration.** Alaskans should not pay more for interstate calls than other Americans pay for comparable calls.

• **Parity.** Alaskans are entitled to receive the same types of telecommunications services and technology as other Americans. The nature of Alaska at times requires that special steps be taken to accomplish this parity.

• Other principles that we have considered significant -- though not as important as those listed above -- are:

• **Competition.** Competition can result in improved service and lower costs to consumers. Thus, competition can be in the public interest not because it is an end in itself, but because it is a means through which the public interest may be advanced. Our focus has been on competition, rather than the interests of any particular competitor.

• **Efficiency.** Market structures that promote efficiency can also result in lower costs to consumers.

How We Do Our Job

• We have always approached telecommunications issues from the perspective of what is best for all Alaska consumers, rural and urban alike. Our primary objective has been to protect and

promote the consumers' interests, not the interests of any particular private party. We have also considered broader market issues and the impact of changes in telecommunications markets on other sectors of the economy.

• We have -- and always have had -- an open door policy.

• We have always been willing to meet with any private party with an interest in these issues whenever they have asked and we have actively sought out such meetings when appropriate.

• We have for many years been meeting or consulting regularly with all interested parties, including Alascom, GCI, the Alaska Telephone Association (ATA), United Utilities, AT&T and others.

• We have invited the input of private parties and encouraged them to think creatively about business and regulatory solutions to which all can agree.

• No position has been taken on any matter of significance without prior consultation with the relevant private parties.

• We have retained and work closely with experienced telecommunications lawyers and economic consultants who have provided valuable assistance. We have used these resources to analyze the relevant issues and to test the rhetoric of others against real-world facts.

• Our activities are coordinated with appropriate officials in Juneau. The Governor reviews and decides important policy issues.

What We Have Done

• We have sought to be part of a process which establishes a market structure beneficial to Alaskans, one that will create high quality service at reasonable rates and facilitate the introduction of new technology and diverse service offerings throughout the State.

• We have advocated the interests of Alaskan consumers directly to the regulators on the Alaska Joint Board, the FCC, and their staffs.

• We have participated in numerous proceedings before the FCC and in federal courts in which the interests of Alaskan consumers were at stake.

• In the Alaska Joint Board proceeding alone, we have submitted approximately 35 sets of comments, reply comments or other major pleadings and a similar number of other legal documents amounting to over 1100 pages of material.

• Partially through our efforts, interstate rate integration has been achieved. Alaskans do not pay more for interstate toll calls than other Americans pay for comparable calls.

• Over the years, various attempts have been made in the Alaska Joint Board proceeding and elsewhere to change FCC rules to shift costs to intrastate services. We have always vigorously opposed those attempts and have been successful to date.

• Over the years, efforts have been made to abolish the joint services arrangement between AT&T and Alascom. We have advocated the maintenance of the joint services arrangement until a new market structure which satisfies the State's basic principles can be implemented.

• Along with many others, we opposed the "Master Agreement" between Alascom and AT&T and that agreement has now been abandoned by those parties. Among the reasons we opposed the Master Agreement:

- It would have resulted in significant increases in intrastate rates.

- It did nothing to promote universal service (or otherwise offer improved telecommunications services).

- It would not have increased the efficiency of the carriers.

- It would have created significant anomalies between market structures in Alaska and those in the rest of the United States.

Where We Are Now

After careful study, we have concluded that various changes have occurred which make continuation of the joint services arrangement between Alascom and AT&T not sustainable in the long run. Those include:

- All relevant carriers -- including Alascom, GCI and the ATA -- have at various times publicly stated that the joint services arrangement should end.

- Technological improvements have made telecommunications networks more cost efficient.

- New Federal and State policies have placed greater emphasis on competition.

- Telecommunications markets themselves have become more competitive in Alaska and elsewhere.

* This proceeding has been underway for 10 years. The time has come to bring it to a conclusion with a plan that best meets our basic principles. Continuation of the present situation -- with all of its uncertainties -- is inhibiting carrier investments in new equipment and technology. These investments would improve telecommunications networks, and thus enhance the telecommunications services available to all Alaskans and create new jobs in many sectors of the economy.

* The Joint Board's Tentative Recommendation seeks to address these changes and presents a plan to transition to a new market structure.

* We have urged that certain changes to the Tentative Recommendation that we believe are necessary to promote universal service (especially to the most rural areas of Alaska) and to prevent intrastate rate increases.

* Most importantly, we have advocated that intrastate cost allocations not be increased. We have also suggested that the transition periods proposed in the Tentative Recommendation be shortened to stimulate new investment and improved services.

* AT&T's "Consumer Benefit Plan" remains skeletal. While it has certain attractive features, it is not ready to be adopted.

* For example, it may result in new or improved services for Alaska, particularly business services which could improve the "telecommunications infrastructure" and create new jobs in Alaska. It also promises reduced or capped toll intrastate rates for at least five years.

* We have encouraged AT&T to "put meat on the bones" of its proposal.

* Most importantly, we have asked AT&T for commitments and guarantees that telecommunications services to the most rural parts of Alaska will not be adversely affected -- and will in fact be improved -- if its proposal is adopted.

* We have suggested transitional mechanisms omitted by AT&T.

* We have also been encouraging the private parties to explore alternative business solutions to the issues presented which would promote the State's basic principles.

August 27, 1993

OUTLINE OF TESTIMONY OF
JOHN W. KATZ,
DIRECTOR, STATE-FEDERAL RELATIONS AND
SPECIAL COUNSEL TO THE GOVERNOR

Basic Principles

- ° The State's participation and the positions we have taken on telecommunications issues have been governed by certain basic principles which have consistently been followed:
 - ° Universal Service. Any change in interstate telecommunications must promote (or at least not be contrary to) the availability at affordable rates of telecommunications services throughout Alaska, including the most rural parts of the State.
 - ° Intrastate Rate Protection. Any change in interstate telecommunications must not shift costs to intrastate services thus causing upward pressures on intrastate rates.
 - ° Interstate Rate Integration. Alaskans should not pay more for interstate calls than other Americans pay for comparable calls.
 - ° Parity. Alaskans are entitled to receive the same types of telecommunications services and technology as other Americans. The nature of Alaska at times requires that special steps be taken to accomplish this parity.
- ° Other principles that we have considered significant -- though not as important as those listed above -- are:
 - ° Competition. Competition can result in improved service and lower costs to consumers. Thus, competition can be in the public interest not because it is an end in itself, but because it is a means through which the public interest may be advanced. Our focus has been on competition, rather than the interests of any particular competitor.
 - ° Efficiency. Market structures that promote efficiency can also result in lower costs to consumers.

How We Do Our Job

- ° We have always approached telecommunications issues from the perspective of what is best for all Alaska consumers, rural and urban alike. Our primary objective has been to protect and

promote the consumers' interests, not the interests of any particular private party. We have also considered broader market issues and the impact of changes in telecommunications markets on other sectors of the economy.

- ° We have -- and always have had -- an open door policy.
 - ° We have always been willing to meet with any private party with an interest in these issues whenever they have asked and we have actively sought out such meetings when appropriate.
 - ° We have for many years been meeting or consulting regularly with all interested parties, including Alascom, GCI, the Alaska Telephone Association (ATA), United Utilities, AT&T and others.
 - ° We have invited the input of private parties and encouraged them to think creatively about business and regulatory solutions to which all can agree.
 - ° No position has been taken on any matter of significance without prior consultation with the relevant private parties.
- ° We have retained and work closely with experienced telecommunications lawyers and economic consultants who have provided valuable assistance. We have used these resources to analyze the relevant issues and to test the rhetoric of others against real-world facts.
- ° Our activities are coordinated with appropriate officials in Juneau. The Governor reviews and decides important policy issues.

What We Have Done

- ° We have sought to be part of a process which establishes a market structure beneficial to Alaskans, one that will create high quality service at reasonable rates and facilitate the introduction of new technology and diverse service offerings throughout the State.
- ° We have advocated the interests of Alaskan consumers directly to the regulators on the Alaska Joint Board, the FCC, and their staffs.
- ° We have participated in numerous proceedings before the FCC and in federal courts in which the interests of Alaskan consumers were at stake.
 - ° In the Alaska Joint Board proceeding alone, we have submitted approximately 35 sets of comments, reply comments or other major pleadings and a similar number of other legal documents amounting to over 1100 pages of material.

- ° Partially through our efforts, interstate rate integration has been achieved. Alaskans do not pay more for interstate toll calls than other Americans pay for comparable calls.
- ° Over the years, various attempts have been made in the Alaska Joint Board proceeding and elsewhere to change FCC rules to shift costs to intrastate services. We have always vigorously opposed those attempts and have been successful to date.
- ° Over the years, efforts have been made to abolish the joint services arrangement between AT&T and Alascom. We have advocated the maintenance of the joint services arrangement until a new market structure which satisfies the State's basic principles can be implemented.
- ° Along with many others, we opposed the "Master Agreement" between Alascom and AT&T and that agreement has now been abandoned by those parties. Among the reasons we opposed the Master Agreement:
 - ° It would have resulted in significant increases in intrastate rates.
 - ° It did nothing to promote universal service (or otherwise offer improved telecommunications services).
 - ° It would not have increased the efficiency of the carriers.
 - ° It would have created significant anomalies between market structures in Alaska and those in the rest of the United States.

Where We Are Now

- ° After careful study, we have concluded that various changes have occurred which make continuation of the joint services arrangement between Alascom and AT&T not sustainable in the long run. Those include:
 - ° All relevant carriers -- including Alascom, GCI and the ATA -- have at various times publicly stated that the joint services arrangement should end.
 - ° Technological improvements have made telecommunications networks more cost efficient.
 - ° New Federal and State policies have placed greater emphasis on competition.
 - ° Telecommunications markets themselves have become more competitive in Alaska and elsewhere.

° This proceeding has been underway for 10 years. The time has come to bring it to a conclusion with a plan that best meets our basic principles. Continuation of the present situation -- with all of its uncertainties -- is inhibiting carrier investments in new equipment and technology. These investments would improve telecommunications networks, and thus enhance the telecommunications services available to all Alaskans and create new jobs in many sectors of the economy.

° The Joint Board's Tentative Recommendation seeks to address these changes and presents a plan to transition to a new market structure.

° We have urged that certain changes to the Tentative Recommendation that we believe are necessary to promote universal service (especially to the most rural areas of Alaska) and to prevent intrastate rate increases.

° Most importantly, we have advocated that intrastate cost allocations not be increased. We have also suggested that the transition periods proposed in the Tentative Recommendation be shortened to stimulate new investment and improved services.

° AT&T's "Consumer Benefit Plan" remains skeletal. While it has certain attractive features, it is not ready to be adopted.

° For example, it may result in new or improved services for Alaska, particularly business services which could improve the "telecommunications infrastructure" and create new jobs in Alaska. It also promises reduced or capped toll intrastate rates for at least five years.

° We have encouraged AT&T to "put meat on the bones" of its proposal.

° Most importantly, we have asked AT&T for commitments and guarantees that telecommunications services to the most rural parts of Alaska will not be adversely affected -- and will in fact be improved -- if its proposal is adopted.

° We have suggested transitional mechanisms omitted by AT&T.

° We have also been encouraging the private parties to explore alternative business solutions to the issues presented which would promote the State's basic principles.

August 27, 1993



John R. Ayers
Executive Vice President
and General Manager

August 18, 1993

Mr. Clifford Gerhart
Editor
Alaska Business Monthly
P. O. Box 241288
Anchorage, AK 99524-9989

Dear Mr. Gerhart:

Your article on Alaskan telecommunications (August, 1993, p. 18) ascribes the following quote to me:

"We're prepared to go forward with exactly what the Joint Board is saying, as long as there is a reasonable transition period."

The quote is accurate, but the context in which it was made is not quite as accurately reflected in the article. The length of the transition period is important, in order to avoid adverse effects on intrastate rates and unnecessary burdens on our customers and employees. And Alascom does agree with the transition period which the Joint Board has proposed.

But it is equally important to the public interest that other elements of the Joint Board proposal be adequate to achieve the public interest goals already identified by the Joint Board. Accelerated cost recovery, or the "buy down" referred to in your article, is a critical element concerning which the Joint Board has yet to speak. Alascom believes that since AT&T proposes to increase Alaskan telecommunications costs with \$230 million in unnecessary, duplicative investment, AT&T should first be required to reduce existing Alaska system investment by a similar amount. Otherwise, in the long term, Alaskan consumers face the prospect of paying needlessly, for needless expense.

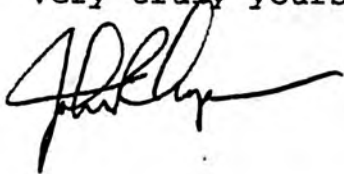
Mr. Clifford Gerhart
Page 2
August 18, 1993

The Joint Board's plan adopts the principle of accelerated cost recovery, but does not specify the amount of such recovery. Other particulars remain to be determined, as well. Necessarily, then, Alascom cannot yet "go forward with exactly what the Joint Board is saying," since on certain issues it has said nothing. We believe the interests of Alaskan consumers will incline the Joint Board to adopt our recommendations on such particulars. Alascom would welcome the chance to supply information concerning its positions -- which are fully disclosed in the public record -- on these or other issues involved in the Joint Board proceeding; please direct inquiries to:

Tom Jensen
Administrator, External Affairs
210 E. Bluff Drive
Anchorage, AK 99501
Phone: 264-7717

Thank you for this opportunity to add to your very comprehensive article.

Very truly yours,

A handwritten signature in dark ink, appearing to read 'Tom Jensen', written over a horizontal line.

CRS Report for Congress

U.S. Telecommunications Infrastructure: Projected Future Evolution

Stephen Gould
Analyst in Information Science and Technology
Science Policy Research Division

February 3, 1993



SUMMARY

Telecommunications networks form an essential infrastructure for the Nation's economy. The U.S. telecommunications industry is being dramatically transformed by a rapid pace of technological change and by the emergence of significant new competitors. Increasingly a diverse network of autonomous, competing, yet interconnected networks, the telecommunications infrastructure is evolving to accommodate an integrated flow of digitally encoded voice, data, video, and graphics. At the same time, the U.S. economy is becoming ever more reliant on information-intensive industries whose day-to-day operations are in turn largely dependent on the sophisticated functions of their computer- and telecommunications-based transaction systems.

Recognizing these trends, President Clinton during the election campaign promised to place a high priority on initiatives designed to foster more rapid development of a high-capacity digital communications infrastructure to serve all business and residential telecommunications customers. Various interest groups have conflicting perspectives on the appropriate role of the Federal Government in developing this portion of the national infrastructure, and a policy debate is now underway.

For a variety of reasons, the timetable for fully deploying the technologies required for universal access to high-capacity services cannot be accurately predicted. But the likely characteristics of the 21st Century telecommunications infrastructure are visible today.

TABLE OF CONTENTS

INTRODUCTION	1
INFRASTRUCTURE CHARACTERISTICS	1
ECONOMIC IMPORTANCE OF THE INFRASTRUCTURE	2
INCREASING ROLE OF COMMERCIAL COMPETITION	3
TECHNOLOGICAL TRENDS	4
INCREASING TECHNOLOGICAL COMPETITION	4
VISIONS FOR THE FUTURE	5
CONGRESSIONAL ACTIVITIES	7
CONCLUSIONS	8

U.S. TELECOMMUNICATIONS INFRASTRUCTURE: PROJECTED FUTURE EVOLUTION

INTRODUCTION

The U.S. telecommunications infrastructure consists of a vast inventory of technological assets. These assets, owned and operated by many different telecommunications service providers and their customers, provide an extensive array of communications services, including fixed and mobile telephony, broadcast radio and television, electronic funds transfer, videoconferencing, paging, document facsimile transfer, electronic mail, and many other varieties of information transport and retrieval. Although not always recognized as part of this infrastructure, customer premises equipment (CPE) plays a key role in both allowing customers to take advantage of particular telecommunications services and governing the success of service offerings. CPE includes such telecommunications devices as telephones, televisions, networked computers, fax machines, and videoconferencing equipment.

INFRASTRUCTURE CHARACTERISTICS

Since the Bell operating companies were broken off from AT&T in 1984, the U.S. telecommunications infrastructure has become, to a much greater degree, a network of interconnected networks. This trend includes the emergence of competitive access providers (CAPs) of voice and data communications services in many metropolitan areas that compete with local telephone companies in linking the offices of business customers to each other and to long-distance carriers. Cable television companies are beginning to get involved in providing a wider range of telecommunications services. Direct competition between the Bell operating companies and the many companies that offer long-distance services is expanding. Operators of cellular telephone systems and various wireless data communications systems have greatly expanded the reach and usefulness of telecommunications networks. Private networks, stitched together with telecommunications technology and services from a variety of vendors, allow many corporations to ensure that their communication needs are effectively met. Participation in the Internet, a worldwide web of interconnected computer networks that also has been stitched together by diverse organizations, is rapidly expanding beyond its government- and university-based roots.

Technological diversity within this infrastructure is increasing steadily even as the trend towards digitization of telecommunications traffic is giving various service offerings a common currency. New types of switching, routing, and signaling technologies are essential components of new service offerings such as Integrated Services Digital Networks (ISDN), videoconferencing and high-capacity data networks. The deployment of fiber optic transmission systems by the industry is widely recognized as a key to providing greatly enhanced capacity and functionality to the infrastructure. But other access and transmission technologies, such as digital compression, packet-switched radio, and very small aperture terminals (VSAT) for satellite-based data communications, are playing important roles in expanding functionality as well. Computer-based information technologies, featuring sophisticated software and inexpensive data storage and processing capacity, have become dominant factors in how the telecommunications infrastructure is used and controlled. Electronic funds transfer (EFT) and electronic document interchange (EDI) exemplify telecommunications applications driven both by business needs and information technology trends.

ECONOMIC IMPORTANCE OF THE INFRASTRUCTURE

Telecommunications technology increasingly functions as the nervous system of both domestic and international commerce. Virtually all business operations rely on one or more telecommunications services for conducting transactions with customers, suppliers, and other company sites. While voice telephony has long been acknowledged as an integral part of everyday life, it is also true that data networks either already are or are rapidly becoming indispensable for a growing array of functions. U.S. businesses are increasingly relying on telecommunications systems and computer-to-computer electronic transactions for paying bills, placing and filling orders, collecting and managing corporate information, and controlling business processes. Data networks are being used and expanded by airlines, banks, stockbrokers, supermarkets and many other types of companies to transfer steady streams of financial, engineering, sales, marketing, and shipping data throughout offices, cities, regions and nations. They are increasingly creating and maintaining sophisticated electronic links to their suppliers, customers, distributors, retailers, transportation contractors, and banks in order to reduce paperwork, implement just-in-time inventory control, enhance purchasing and sales opportunities, provide better customer service, and tighten management and control. Telecommunications systems are being used to constantly gather huge quantities of data that, when processed by computers, provide valuable information for business decisionmaking.

The booming use in recent years of facsimile machines to transfer written information is well known. During the 1990s, many observers are predicting a similar boom in the use of videoconferencing. For many companies and Government organizations, videoconferencing has already become a valuable tool used by engineers conducting program reviews with colleagues at remote locations; financial managers analyzing investment opportunities; prosecutors interviewing victims and witnesses; corporate lawyers negotiating contracts;

personnel managers interviewing job candidates; sales personnel communicating with regular customers; and executives conducting worldwide business reviews.

INCREASING ROLE OF COMMERCIAL COMPETITION

Although many segments of the telecommunications industry are regulated as monopolies or oligopolies, a lack of competition within service territories across the United States is increasingly rare. Customers with sophisticated needs and the ability to adopt new cost-effective solutions are generally unconstrained as to which telecommunications vendors they rely on. Indeed, in order to secure cost effective solutions, more and more consumers of those telecommunications services find it rewarding to bypass the offerings of telecommunications vendors serving their locations who are held responsible by regulators for assuring inexpensive universal access to basic services. For example, major rural retailers such as Walmart rely on VSAT systems instead of local telephone circuits for meeting their data communications needs no matter where their stores are built. A sizable population of rural and suburban residents use various satellite-based television services even if they are within range of local over-the-air broadcast stations or have cable television distribution available.

One primary objective of industry regulation is to ensure that some basic level of service is available and affordable to almost all U.S. citizens and businesses. However, the task of making particular categories of telecommunications services as inexpensive as possible has been shifting from regulation to a greater reliance on competition. The primary example of this is long-distance telephone service, in which competition among AT&T, MCI, Sprint, and other carriers has substantially reduced prices.¹ Universal access requirements have largely proven to be politically and economically infeasible for encouraging the introduction of new services, primarily because customer demand for new services is in doubt. Regulators have been reluctant to allow telephone customers to be charged for the capital investments necessary to enable new telecommunications services unless such investments can be cost-justified solely in the context of providing regulated basic services. For example, fiber optic cables have been extensively deployed by local telephone companies in circuits handling a large volume of telephone calls because such deployment helps minimize the costs of providing basic telephone service. Replacement of copper wire with fiber optic cables has not been permitted for circuits that currently handle a relatively low volume of calls because regulators do not believe the costs to ratepayers will be justified by new services. Thus, separate capital investments are often required for advanced services, such as cellular telephony, with prices governed by marketplace conditions instead of regulation.

¹ AT&T is still subject to more extensive rate regulation than its competitors because of its continued dominance in the long distance telecommunications market.

TECHNOLOGICAL TRENDS

A series of technological developments over the past three decades is largely responsible for the ongoing transformation of the telecommunications industry and infrastructure. The development of microchips has enabled a variety of telecommunications devices to store and process information at relatively low cost. The sophistication with which they are programmed to perform various tasks is steadily increasing. The advent of fiber optic cable and signal compression techniques has allowed increasingly larger volumes of information to be delivered with speed and accuracy. A shift from "analog" to "digital" transmission--encoding information such as sound or color with numerical signals rather than varying shapes of electromagnetic waves--permits voice, photographs, moving pictures, data, and text all to be reduced to one common type of signal, which can be sent intermixed through a single fiber, cable, or microwave medium.

Many experts are predicting that individual telecommunications circuits will soon need routinely to transport extremely large volumes of digitized information among computer-based devices throughout much of the U.S. telecommunications infrastructure. While demand for current generation, higher capacity circuits has been growing in recent years, this requirement has not yet been sufficiently proven to be recognized as a trend. The mass appeal of services that would require circuit capacities much greater than those readily available today will likely remain speculative at best until the costs are better known. For example, while interactive, multimedia entertainment devices based on the high-definition television (HDTV) technology now being developed might well put high-capacity circuits to good use, the price of computer-based HDTV sets and the availability of inexpensive services and programming for them--and hence market demand--are still uncertain.

INCREASING TECHNOLOGICAL COMPETITION

The evolving capabilities of other technologies add to the uncertainty about demand for such advanced telecommunications technologies as fiber optics. Projections of a need for direct connections to fiber optic telecommunications systems to every home and business in the United States is a good example. While there are convincing arguments that fiber optic telecommunications systems will *eventually* prove to have superior capabilities suitable for meeting the future telecommunications needs of many homes and small businesses, the degree to which other technologies can more cost-effectively meet the actual demands of residential and small business telecommunications customers for the *foreseeable future* is an important consideration. Advancements in digital compression technology, which are enabling lower capacity transmission media to handle steadily increasing amounts of telecommunications traffic, might well significantly postpone the day when the full capacity of fiber optic cabling is demanded by most customers.

Copper wiring currently makes telephone service readily available to more than 95 percent of all potential U.S. customers while coaxial cabling makes cable

television service readily available to more than 85 percent of all potential customers. The investment required to comprehensively supplement or replace this installed copper/coaxial infrastructure with fiber optic cabling is likely to total several hundred billion dollars. The timetable for deploying such an infrastructure cannot be predicted because potential demand for fiber optic service is likely to be reduced continuously by cost competition from advancing compression techniques coupled with existing copper wire, coaxial cabling, satellite-based and radio-based telecommunications systems.²

Competition among technologies that can provide voice and data communication capabilities is increasing. Wireless data networks, wireless personal communications networks (PCN), and ISDN are among the emerging options beginning to compete with traditional telephony, radio-based dispatch systems, and cellular telephone networks. Deployment of ISDN, which improves transmission quality by replacing analog signaling with digital signaling, is a strategy for expanding the capabilities of currently installed copper wires. PCN technology, currently being tested by various telecommunications vendors, promises to make mobile personal communications more convenient than use of cellular telephone systems. Wireless data networks are linking portable computers to corporate databases and electronic mail services.

VISIONS FOR THE FUTURE

Position statements released during the 1992 presidential campaign indicate that President Clinton favors having Government serve as a catalyst for the development by the private sector of an advanced national telecommunications network. This network "would help companies collaborate on research and design for advanced manufacturing; allow doctors across the country to access leading medical expertise; put immense educational resources at the fingertips of American teachers and students; open new avenues for disabled people to do things they can't do today; provide technical information to small businesses; and make telecommuting much easier. Such a network could do for the productivity of individuals at their places of work and learning what the interstate highway of the 1950s did for the productivity of the nation's travel and distribution system." Mr. Clinton also indicated support for providing funding for the National Research and Education Network (NREN) and "additional funding to network our schools, hospitals and libraries."³

² There is already a substantial amount of fiber optic cabling within the telecommunications infrastructure. For example, of the 90,000 telephone network miles collectively run by AT&T, MCI Communications Corporation and Sprint Corporation, 61,600 of them are fiber. An average of 95 percent of their customer's traffic is carried by fiber optic cabling. About 75 percent of the backbone circuits owned by the Bell operating companies are also fiber.

³ See "Technology: the Engine of Economic Growth--A National Technology Policy for America," Sept. 18, 1992, Clinton/Gore National Campaign Headquarters.

Much has been written about the telecommunications-based world of the future where widespread telecommuting, individualized tutoring and continuing education, more convenient access to high-quality health care, exotic entertainment, and access to a vast array of information resources are all facilitated by an advanced telecommunications infrastructure. That future might arrive sometime in the first half of the next century. What is often not acknowledged is that much of what is contained in these visions--including that sketched by the Clinton/Gore campaign--can be accomplished within the telecommunications infrastructure either as it now stands, or with relatively modest enhancements already well underway.⁴

Progress towards these visions, while being continuously facilitated by the ongoing investment programs of the telecommunications industry and its suppliers, is mostly dependent on a full exploitation of currently available information technology by a large population of employers, educators, health care providers, entertainment programmers, and information resource developers. There is a substantial gap between what is already possible with information technology that is available today and actual deployment rates by many sectors of society. For example, Arthur D. Little, Inc., has estimated that widespread adoption of currently available telecommunications and information technology within the health care industry could reduce the cost of health care in the United States by \$36 billion a year.⁵

The NREN program, authorized by Congress in 1991 and coordinated on a national level by a coalition of Federal agencies, will likely serve as an evolving prototype of a larger national information infrastructure (NII) that will also be developed from the evolving capabilities of the U.S. telecommunication infrastructure. As defined by the Computer Science Policy Project, the NII concept integrates four primary elements: (1) telecommunications networks; (2) computational resources; (3) computer-based information resources; and (4) network-accessible human resources. While NREN is focused on linking resources of value to the research and education communities, the NII would make electronic access to all types of public and private information more easily accessible. It is envisioned that the NII will be enabled by a telecommunications infrastructure that provides the capacity to transmit information, at both high and low speeds, in a variety of data formats, including image, voice, and video

⁴ The Consumer Federation of America has estimated that narrowband ISDN could bring 80 percent of the benefit of broadband fiber optics to the home at 10 percent of the cost. Most of the Bell operating companies plan to have at least 50 percent of their telephone lines ISDN-capable by the end of 1994. According to the Electronic Frontier Foundation and others, ubiquitous deployment of this technology could readily be accomplished within three to five years with a modest increase in capital spending by telephone companies.

⁵ See Anthes, Gary H. and Joanie M. Wexler. Industry looks to Clinton Regime to Accelerate Technology Highway. *Computerworld*, Jan. 25, 1993. p. 20.

for "a range of uses anytime, anywhere."⁶ In addition to linking institutions, from schools and businesses to libraries and laboratories, the NII would link individuals to service providers and business contacts in all fields.

CONGRESSIONAL ACTIVITIES

Various ideas for promoting a more rapid technological evolution of the telecommunications infrastructure have been discussed and debated within Congress over the past several years, prompted in part by competition with Europe and Japan. The merits of encouraging telephone companies to more widely and rapidly deploy fiber optic cabling within their networks have received considerable attention, with legislation introduced in the 102d Congress designed to promote a complete transition from copper wiring to fiber optic cabling by 2015.⁷ Proposed reallocation of portions of the radio spectrum for new telecommunications services has also received considerable legislative attention. To date, authorizing development of the NREN is the primary congressional initiative likely to directly contribute to new technology development within the telecommunications industry. Early in the 103d Congress, legislation was reintroduced that would facilitate the development and demonstration of NREN technology within health care, education, and manufacturing.⁸

Congressional consideration of just how national telecommunications needs can be most efficiently met in the next century will likely include debate on such issues as the adequacy of private sector investment, the role of Government regulation and ownership restrictions, the need for national technology policy, how Government services might be reshaped by telecommunications capabilities, and the reliability and vulnerabilities of telecommunications networks.⁹ In addition to industry participants, such as telephone and cable companies, interest groups representing publishers, educators, consumers, State and local governments, computer companies, and other business constituencies are likely to play important roles. The Subcommittee on Telecommunications and Finance of the House Committee on Energy and Commerce has begun a series of hearings on the future of the telecommunications infrastructure.

⁶ See Computer Systems Policy Project. Perspectives on the National Information Infrastructure, Jan. 12, 1993.

⁷ S. 1200 (Burns) and H.R. 2546 (Boucher).

⁸ S. 4 (Hollings).

⁹ For a discussion of telecommunications reliability issues, see U.S. Library of Congress. Congressional Research Service. Telecommunications: Ensuring the Reliability of U.S. Networks, by Stephen Gould. CRS Issue Brief IB92114. Washington, 1992. (Updated regularly).

CONCLUSIONS

While technologies not available today might play important roles in the telecommunications infrastructure of the 21st Century, that infrastructure is likely to prominently feature many of the technologies already in use. Fiber optic networks, VSAT technology, packet-switched radio and many other systems will be more widely deployed, but no one technology is likely to dominate. Agreed-upon technical standards for piecing together various types of networks and ensuring that they interoperate smoothly will be the cement that holds the infrastructure together. The infrastructure will deliver an expanding menu of options and carrying capacities (bandwidth) from which consumers can buy those that best meet their individual needs.