

Summary and Policy Implications 1

As the Internet, electronic mail, compact discs, and digital telephones sweep through much of the United States, Native American activists are asking themselves whether and how the new technology can empower Native communities. Or will the new technology of telecommunications and computers serve only as a modern-day version of the telegraph and railroad that ran right through Indian lands with little benefit to the tribes? Will the technology serve to bring together or further disconnect Alaskan and Hawaiian Natives from their continental and island homelands?

At the time of the American Revolution, what is now the United States was home to hundreds of indigenous peoples with a variety of forms of self-government, organized at the tribal, village, or island level. Today's Native Americans—American Indians, Alaska Natives, and Native Hawaiians—are the descendants of these indigenous peoples.¹ Over the last 200 years, indigenous peoples have struggled to maintain their cultures, sovereignty, and self-determination in the face of population pressures and ever-expanding national and state governments.

The established framework of federal Indian law recognizes tribal sovereignty, a federal trust responsibility for those tribal lands and resources ceded to or taken by the United States, and a commitment to tribal self-determination over programs and services vital to tribal well-being. Federal law and policy apply this framework to the 550 federally recognized Indian tribes—in-



¹*Native Americans* are defined in this report to include American Indians, Alaska Natives (Indian, Aleut, and Eskimo), and Native Hawaiians who are descendants of indigenous peoples who lived in geographic areas now comprising the United States.

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TABLE 1-1: Population Profile of Native Americans

Native Americans (total estimated 1990 population) ^a	Population
American Indians	1,875,000
Alaska Natives (52% Eskimo, 12% Aleut, 36% Indian)	86,000
Native Hawaiians	211,000
Grand total	2,172,000
Native Americans living in rural or semi-rural areas	
American Indians Reservations and trust lands	437,000
Tribal Jurisdictional Statistical Areas (Oklahoma)	201,000
Tribal Designated Statistical Areas	54,000
Other rural/semirural areas (est.)	250,000
Alaska Natives Alaska Native Village Statistical Areas	47,000
Native Hawaiians Rural/semi-rural areas (est.)	70,000
Grand total rural/semi-rural	1,059,000

^aThe U S Census Bureau relies heavily on self-identification by respondents to obtain information on race and ethnicity. American Indian tribes and Alaska Native villages vary in how they determine tribal membership, typically based on family lineage and/or blood quantum. Native Hawaiians are variously defined as having a family lineage and/or a specified blood quantum traceable to 1778, the time of Captain James Cook's arrival on Hawaiian shores.

SOURCE: Office of Technology Assessment, 1995, based on information from the 1990 Census of Population in the following U.S., Bureau of the Census documents: Statistical Abstract of the United States, 1994 (Washington, DC: U S Government Printing Office, 1994); County & City Data Book, 1994 (GPO, 1994); 1990, *Social and Economic Characteristics, Hawaii*, 1990 CP-2-13 (GPO, September 1993), and "We the First Americans," September 1993.

cluding about 220 Alaska Native tribal or village governments (Indian, Aleut, or Eskimo). Federal policy on Native Hawaiians is more ambiguous, although the United States has apologized for its role in the overthrow of the Hawaiian Kingdom. The strong parallels between the history and experience of Native Hawaiians with those of American Indians and Alaska Natives provide a basis for including Native Hawaiians within this framework.

Telecommunications technology offers many opportunities to help Native Americans deepen their cultural roots, empower their communities, strengthen Native governments, and address daunting challenges such as very high unemployment

and poverty rates and poor health conditions. *The promise of telecommunications is by no means assured, however.* Indeed, if Native Americans, collectively, do not gain better understanding and control of this technology, the result could be to further undermine Native culture, community, sovereignty, and self-determination.

No single technological solution will address Native American needs. A variety of technologies, working together or complementing one another, will best meet their diverse needs. Computer networking, satellite videoconferencing, computers and software, telefacsimile, digital switching, broadcast radio, cable TV, and cellular or wireless communications all have a role to play. Even the basic telephone is important because many (perhaps as much as one-half) rural Native homes do not have a telephone today. For purposes of this report, all of these technologies collectively are referred to as *telecommunications technology*.

This report focuses primarily on the one-third of Native Americans who are residents of tribal reservations and trust lands, Alaska Native villages, and Native Hawaiian communities located in rural, remote areas (see table 1-1). The report also has implications for other Native Americans who live in rural or semirural areas (about 15 percent) or in metropolitan areas (about one-half).

OPPORTUNITIES AND CHALLENGES

During the course of this study, the Office of Technology Assessment (OTA) has observed a remarkable increase in the level of interest in telecommunications by Native Americans (see appendix A for a partial list of Native computer networking). Some major organizations, such as the National Congress of American Indians and the American Indian Science and Engineering Society, are including sessions on telecommunications or the information superhighway at annual conferences and meetings. The tribal and community colleges that serve Native Americans—in the contiguous 48 states, Alaska, and Hawaii—have taken a strong leadership role in developing and demonstrating new telecommunications applica-

tions. Various grassroots groups, from Americans for Indian Opportunity to Pacific Islanders in Communications, are advocating Native use of telecommunications—from the development of Native-oriented programming to operation of computer networks. OTA's own Native American home page, developed for this study and accessible via the Internet (see appendix B), has attracted widespread interest among Native American technology activists and advocates.

OTA also has observed an increase in the number and variety of Native American telecommunications pilot projects and demonstrations (see box 1-1). Exemplary projects identified during the OTA study span the country east to west—from the Oneida Nation's fiberoptic wired community in upstate New York, to the Navajo Nation's tribal telecommunications initiative in New Mexico, Arizona, and Utah, to the North Slope Borough's use of distance learning in Alaska above the Arctic Circle, to the Hawaii community college system's two-way videoconferencing among several rural island locations.

Despite these positive signs, Native Americans face significant barriers and challenges in realizing the potential of telecommunications. At this time, it is difficult to predict whether the ultimate outcome will be more positive than negative for Native Americans. Two possibilities are described below.

■ An Optimistic Year 2000 Scenario

Most Alaska Native villages, many American Indian reservations, and some Native Hawaiian communities are geographically isolated. Under an optimistic scenario, distance education and telemedicine provide widespread access to a range of educational and medical information and services not otherwise available or affordable. Telecommunications facilitates the shift to disease prevention and health promotion, not just health care and treatment, as the long-term strategy for overcoming serious Native health challenges. Schools, libraries, community service centers, and family wellness clinics broaden access to technology-enhanced services. Telecommunica-



Top: Molokai High School on Molokai Island, Hawaii. Bottom: Molokai High School students using personal computers in the classroom.

tions improves the economies of scale for producing and distributing Native-oriented educational materials and Native programming to widely dispersed Native Americans living in both metropolitan and rural areas.

Telecommunications helps stimulate economic development in Native areas. Telecommunications proves to be a necessary, though not sufficient, condition for economic revitalization. In this scenario, telecommunications is used to:

- 1) create jobs in Native-owned telephone, computer, broadcasting, and related companies;
- 2) market Native-produced arts and crafts electronically;
- 3) develop and promote tourist and recreational activities on or near Native lands;
- 4) pro-

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BOX 1-1: A Sample of Native American Telecommunications Activities

Where applicable, the Uniform Resource Locator for use with Internet browsers is listed in parentheses.

■ **Oneida Nation Telecommunications Infrastructure Development** (Oneida, New York)

Fiberoptic wiring to government offices, community centers, and new houses. Internet access provided by NYSERNet, Inc. First tribal home page (<http://nysernet.org/oneida/>) tells the Oneida story of culture and community development.

■ **Cherokee Nation Telecommunications Activities** (Oklahoma)

In one project, the Cherokee Nation developed a financial information system for the Department of the Interior's Office of Self-Governance. In another project, in partnership with NASA (National Aeronautical and Space Administration) Science Internet, the Sequoyah High School and the W.W. Keeler Complex will be connected to the Internet for scientific and educational use. In the future, the Cherokee Nation is planning to link all Cherokee Nation offices.

■ **Navajo Nation Telecommunications Partnerships and Planning** (New Mexico, Arizona, Utah)

Individual projects include Internet access through the Crownpoint Pilot Project and the Information Technology Office's development of the Technology and Information Resource Plan. Partnerships to develop telecommunications human resources and infrastructure are forming with Crownpoint Institute of Technology, Navajo Community College, National Aeronautical and Space Administration, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, University of New Mexico, and Northern Arizona University, among others.

■ **Confederated Tribes of the Chehalis Telecommunications Committee** (Oakville, Washington)

The Confederated Tribes of the Chehalis formed the five-person Communication, Information, and Technology Committee two years ago, after a series of demonstrations and training from the USDA (United States Department of Agriculture) Extension Indian Reservation Program. Spurred by this activity, the Affiliated Tribes of Northwest Indians (ATNI) in Portland recently created a similar committee, the Telecommunications and Technology Committee. The ATNI has 50 member tribes from Montana, Oregon, Washington, Idaho, and Alaska (Native villages).

■ **North Slope Borough Distance Education Delivery** (Barrow, Alaska)

This two-way videoconferencing program originates from a high school studio in Barrow. Video, text, and graphics are transmitted to the North Slope's remote schools via a full-time dedicated satellite link. Courses such as trigonometry and Inupiat studies/language are now available at schools in remote locations.

■ **Nation of Hawai'i Home Page**

This home page (<http://hawaii-nation.org/nation/>), supporting the restoration of the Nation of Hawai'i, was put together by the executive administration of the Nation of Hawai'i in Waimanalo, Hawaii, with support from the Educational and Cultural Organization to Advance Restoration and Transition (ECOART), also located in Waimanalo. Hawaii Online, in Honolulu, Hawaii provided Internet access.

■ **Hawaiian Language Revitalization**

The Komike Hua'oleo (Hawaiian Lexicon Committee) is creating several hundred new Hawaiian words for technology (e.g., modem, hard drive, font, format, left justification, export text, computer monitor, and bulletin board service). Keola Donaghy, an immersion teacher and computer consultant, working with Hale Kuamo'o, the Hawaiian Language Center at the University of Hawaii at Hilo, developed the "Leoki" electronic bulletin board service interconnected through Hawaii FYI, a free state dial-in network.

■ **Tribal Telephone Providers**

The Office of Technology Assessment located four tribes with telephone companies: Cheyenne River Sioux Tribe Telephone Authority, Eagle Butte, South Dakota; Gila River Telecommunications, Inc., Chandler, Arizona; Ft. Mojave Telecommunications, Ft. Mojave, Arizona; and Tohono O'Odham Utility Authority, Sells, Arizona. The San Carlos Apache Tribe, San Carlos, Arizona, is waiting for a loan approval from the USDA Rural Utilities Service to buy its local telephone exchange.

BOX 1-1: A Sample of Native American Telecommunications Activities (Cont'd.)

■ A Sample of Telecommunications Support Organizations

Native American Public Broadcasting Consortium, Lincoln, Nebraska

Pacific Islanders in Communications, Honolulu

Intertribal Geographic Information Systems Council, Pendleton, Oregon

BIA Geographic Data Service Center, Lakewood, Colorado

United Native American Network, Burlington, Washington

Americans for Indian Opportunity, Bernalillo, New Mexico—supporter of the INDIANnet BBS

Electronic Pathways Alliance, Santa Fe

(<http://hanksville.phast.umass.edu/defs/independent/ElecPath/elecpath.html>)

■ A Sample of Online Information Resources (see appendix B for complete list)

BIA (Bureau of Indian Affairs) Division of Energy and Mineral Resources, Golden, Colorado

(<http://snake2.cr.usgs.gov/>)

Indian Health Service (<http://www.tucson.ihc.gov/>)

USDA Extension Indian Reservation Program (gopher://134.121.80.31:70/1/eirp/eirp.70)

Sioux Nation (<http://www.state.sd.us/state/executive/tourism/sioux/sioux.html>)

Indian Pueblo Cultural Center (<http://hanksville.phast.umass.edu/defs/independent/PCC/PCC.html>)

Heard Museum (<http://hanksvillephast.umass.edu/defs/independent/Heard/Heard.html>)

Navajo Community College (<http://hanksville.phast.umass.edu/defs/NCC.html>)

American Indian Science and Engineering Society (<http://bioc02.uthscsa.edu/aisesnet.html>)

American Indian College Fund (<http://hanksville.phast.umass.edu/defs/independent/AICF.html>)

Native American Rights Fund (<http://hanksville.phast.umass.edu/miSc/NARF.html>)

National Indian Policy Center

(gopher://gwis.circ.gwu.edu.:70/11/Centers%2c%20Institutes%2c%20and%20Research%20at%20GWU/Centers%20and%20Institutes/National%20Indian%20policy%20Center)

SOURCE: Office of Technology Assessment, 1995.

vide expertise and competitive skills to Native entrepreneurs; 5) provide infrastructure for business startups in Native areas; and 6) manage Native land and natural and financial resources.

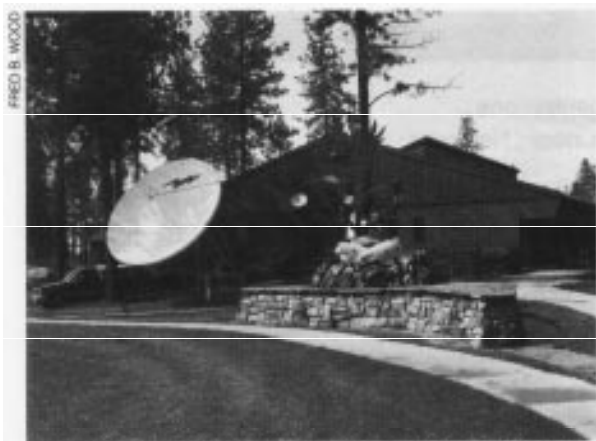
Telecommunications technology allows Native Americans to share and broaden their culture electronically within and among Native communities. Computer graphics, software, and multimedia help strengthen and disseminate Native art, language, and dances. Native cultural materials are shared electronically by community and cultural centers, libraries, and schools that serve Native Americans. Native-produced TV and radio programming is distributed over Native-owned cable and radio stations and via other stations that reach Native American populations.

Native governments—whether at the tribal, village, or community level—routinely use videoconferencing and computer networking to fa-

cilitate participation and consultation with their geographically dispersed members. This same technology helps strengthen intertribal collaboration and facilitates the participation of Native organizations in relevant activities of state and federal governments. Native governments receive federal and state services electronically and deliver services electronically to tribal or village members where appropriate. When federal and state governments are “reinvented,” Native Americans use telecommunications to influence the outcome so it is sensitive to their values and visions for the future.

■ A Pessimistic Year 2000 Scenario

The inadequacies of rural Native American economies and telecommunications infrastructure continue to prove too great to overcome. Under



Left: Satellite earth station at the Salish Kootenai College on the Flathead Indian Reservation, Montana. The college downloads video programming via satellite for classroom use. *Right:* American Indian video programming is provided to students and the tribal community via the low-power public television station located at the Salish Kootenai College.

this pessimistic scenario, unemployment rates still exceed 50 percent on many Indian reservations and in most Alaska Native villages, contributing to continuing family, health, and substance abuse problems. Most reservations and villages still have weak economies that make generating or attracting investment capital difficult. As a group, American Indians continue to be the most disadvantaged in the United States with regard to basic telephone service. In the year 2000, about one-half of American Indian homes in rural areas still do not have any telephone service, far below nationwide averages, reflecting continuing infrastructure deficiencies, low family income, and, in some cases, cultural preferences.

In this scenario, the lack of Native leadership on telecommunications continues to limit efforts to plan for and implement infrastructure improvements. The vast majority of tribes, reservations, villages, and island communities still do not have a telecommunications strategy or a process in place for developing a strategy or plan. Nor do any of the major nationwide Native American federations or intertribal organizations. This places the Native American community at a disadvantage because many other segments of the United States have long since fully mobilized on telecommunications issues.

The absence of federal policy or coordination on Native American telecommunications continues through the year 2000, thereby curtailing the

development of an appropriate and effective federal role. The Federal Communications Commission (FCC) still does not have a Native American policy, nor has it applied the framework of federal Indian law to telecommunications. The federal agencies that serve Native Americans have yet to develop an interagency approach to meeting the telecommunications requirements of Native Americans and building telecommunications expertise at the tribal, village, or community level. While many agencies do support various individual projects, the sum is still less than the parts.

The lack of infrastructure, leadership, planning, funding, and policy means—under this pessimistic scenario—that many of the rural, remote Native areas are left on the sidelines of the telecommunications revolution. These areas are unable to capture the potential educational, health, economic, social, and cultural benefits of telecommunications applications. In this year 2000 scenario, Native Americans run the risk of being exploited by, rather than controlling, the technology. Without meaningful and extensive Native involvement, telecommunications ends up further undermining Native culture and values and disenfranchising, rather than empowering, Native Americans.

POLICY IMPLICATIONS

Native American telecommunications policy and activities are clearly lagging behind both: 1) other

areas of Native American policy (e.g., self-governance, education, and health care); and 2) the telecommunications policy development and initiatives in the majority society. While Native American telecommunications activities are increasing, the rate of change in the majority society has accelerated markedly in recent years. This reflects the current emphasis on the national information superhighway, and the further transition of the United States into a post-industrial information economy and society.

Absent some kind of policy interventions, Native Americans are unlikely to catch up with, and probably will fall further behind, the majority society with respect to telecommunications. This takes on greater importance given the likely benefits of telecommunications to Native Americans that may be deferred, diminished, or foregone under the policy status quo. *OTA has identified eight major components to a comprehensive policy framework on Native American telecommunications.* The first four emphasize a lead role for Native groups and governments—the empowerment of Native Americans in telecommunications—with the federal government in a supportive role. The second four emphasize the need to rethink and refocus federal policy strategies to recognize and strengthen Native American telecommunications infrastructure and sovereignty. These require a major federal government role, but also extensive Native American participation to ensure that Native values and sovereignty are strengthened, not weakened.

■ Empowering Native American Telecommunications

Tribal, federal agency, and congressional actions could focus on implementing these four essential elements of an overall Native American telecommunications policy framework.

Grassroots Tribal/Village/Community Empowerment

At the grassroots level, one key is developing *local sources of telecommunications expertise*. Tribal and community colleges are important sources of expertise, as are the small but growing group of Native computer and telecommunications activists and grassroots groups. Native-owned telephone and cable companies and radio stations could provide expertise, especially if the small number now operating could be increased. Another key is developing a *grassroots telecommunications plan*. Local tribal/village/community leaders could set up a *telecommunications committee or task force*, as has been done by, for example, the Navajo Nation (Arizona/New Mexico/Utah) and the Affiliated Tribes of the Chehalis (Washington).

The committee, in consultation with community leaders and members, could develop a plan or vision of how telecommunications could best meet local Native educational, health, economic and social development, cultural, and other needs. The plan could encourage technology-enhanced collaboration among Native service providers—the integrated delivery of services could be a key goal. A grassroots, bottom-up approach would help assure responsive, culturally sensitive, and self-empowering Native American telecommunications. The support of local tribal, village, and community leaders is essential to success.

National Native Leadership

To complement a grassroots emphasis, another key is *strengthening Native American leadership on telecommunications at the national level*. The groundwork is already in place. Groups that are in the forefront on Native telecommunications² could work with regional and national groups such as the Alaska Federation of Natives, National

²Examples include the American Indian Higher Education Consortium, American Indian Science and Engineering Society, Pacific Islanders in Communications, Native American Public Broadcasting Consortium, Intertribal Geographic Information Systems Council, Americans for Indian Opportunity, and Indigenous Communications Association.

BOX 1-2: Matching Telecommunications Technology with Native Needs

An affordable deployment of telecommunications infrastructure in rural, remote Native areas might include three levels or tiers of service:

Tier 1: Basic telephone service (with digital switching), single-party line with touchtone and dial-up access (with modem) to computer networks and Internet gateways; cable, broadcast, and/or satellite TV/radio; wireless/cellular telephone where appropriate.

For: Individual Native homes, small businesses, and schools.

Tier 2: Tier 1, plus high-speed modem or direct connection to computer networks/Internet; one-way full motion videoconferencing (with two-way audio) or slow scan/compressed two-way video via land lines/satellite.

For: Community communication centers, tribal and Native governments (if separate from community centers), tribal and community colleges, some larger businesses.

Tier 3: Tiers 1 and 2, plus very-high-speed data communication links and two-way, full-motion videoconferencing (fiber optic trunk lines to fiber or satellite backbone).

For: Major medical centers, universities, business parks, or enterprise zones.

SOURCE :Office of Technology Assessment, 1995.

Congress of American Indians, and appropriate Native Hawaiian support groups and service providers (e.g., Alu Like) to set up formal committees and develop a *coordinated Native American telecommunications strategy*. This eventually could lead to a “Native American Telecommunications Association” or the equivalent.

Also, Native organizations could work with universities to develop *leadership programs in telecommunications*. The Universities of Alaska and Hawaii (and their associated rural campuses and community colleges) seem well suited for this role, as would various universities with American Indian programs. Community colleges and universities would be logical focal points for telecommunications education and training. And Native organizations could work with the private sector, as well as educators, to establish local and regional *telecommunications technical assistance centers and programs*.

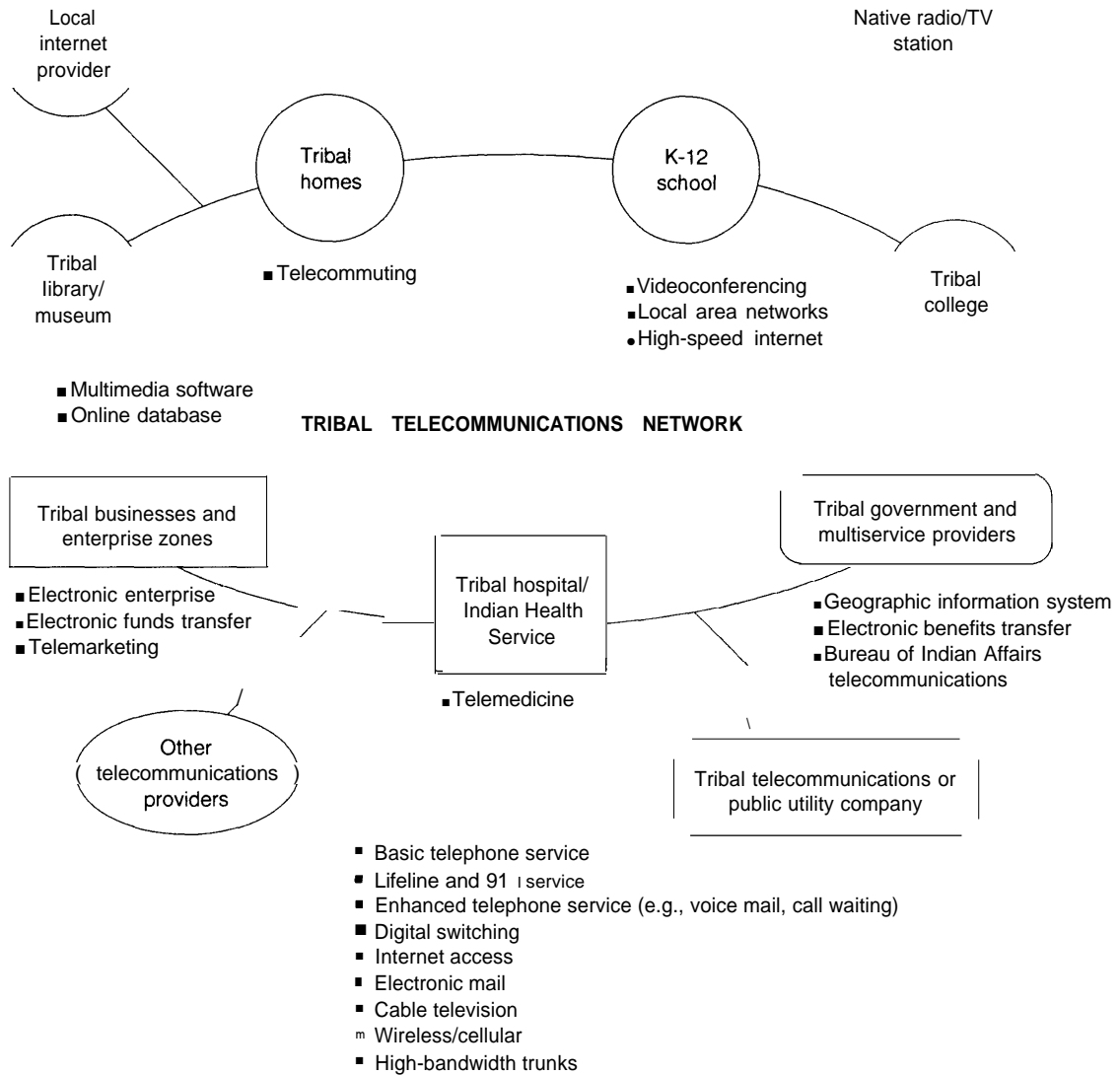
Integrated Infrastructure Development

The financial resources currently and prospectively available to many rural Native communities are insufficient to support development of the telecommunications infrastructure by multiple, inde-

pendent groups. Both funds and expertise are in short supply. This makes it imperative that telecommunications investments be for technologies and systems that are compatible, complementary, user-friendly, and cost-effective. Pilot projects are important for assessing the potential benefits, costs, and problems associated with tribal/village use of telecommunications, and provide a basis for sound decisions on infrastructure investment and development. A two- or *three-tier telecommunications infrastructure* will be necessary in many rural Native areas (see box 1-2) to match technology and services with needs on an affordable and practical basis.

The concept of a community communication center warrants serious consideration, especially in Native areas where it is unrealistic for most homes and offices to have anything more than basic telecommunications in the short- to medium-term. A local high school, community college, library, community/cultural center, family wellness clinic, multiservice delivery center, or tribal/village office could be designated as a community communication center where a wide range of telecommunications equipment and services are available to residents, including students and en-

FIGURE 1-1: Tribal Telecommunity



SOURCE: Madonna Peltier-Yawakle, July 20, 1994, and Office of Technology Assessment, 1995

trepreneurs. A slightly expanded version would include several key community buildings in a community telecommunications network (see figure 1-1). Either way, the intent would be to provide videoconferencing, computer networking, multimedia, and other services sooner than would otherwise be possible, and to achieve considerable

economies of scale by aggregating demand for and use of a common telecommunications infrastructure.

Native Entrepreneurial Activity

The formation of Native-owned and -operated businesses—and especially telecommunications



Above: The OTZ Telephone Cooperative serves the 3,000 residents of Kotzebue, Alaska, 35 miles above the Arctic Circle. **Left:** Digital switching center at the OTZ Telephone Cooperative. Digital technologies are essential to modern telephone service.

businesses—is one of the best ways to: 1) develop grassroots expertise and leadership in telecommunications; 2) create new jobs on Indian reservations and in Native villages and communities; 3) stimulate the Native economy; and 4) potentially open up new opportunities for Native businesses to compete in regional, national, and international markets. Success stories like the Cheyenne River Sioux Tribe Telephone Authority (South Dakota) demonstrate that Native-owned and -operated telephone, cable TV, satellite broadcast TV, and cellular and wireless companies are within reach. The same holds true for Native-owned and -operated radio stations. But, again, expertise and capital are limited at present. *Federal grant and loan programs could be reviewed and reprogrammed or restructured to place greater emphasis and focus on supporting Native telecommunications entrepreneurs. Native leaders could consider ways to apply some portion of tribal revenues to support telecommunications start-up ventures.*

■ Refocusing the Federal Role

Consistent with empowering Native communities, Congress and appropriate federal agencies could take action in the following areas to develop a federal policy on Native American telecommunications policy, with the involvement of Native American groups, leaders, and telecommunications activists.

Interagency Strategy and Funding

Dozens of federal agencies provide some support for Native American telecommunications, but these efforts are uncoordinated and fragmented. The executive branch, with the support and oversight of Congress, could develop an interagency strategy to provide direction and coordination. This could include an interagency task force or working group. The Bureau of Indian Affairs (BIA), Indian Health Service (IHS), Administration for Native Americans (ANA), and National Telecommunications and Information Administration (NTIA), among others, could combine efforts to strengthen the telecommunications infrastructure in Native areas. Improvements in federal agency telecommunications capabilities should

be viewed in the context of tribal, village, and community infrastructure development needs. Local and federal initiatives should complement each other where possible. Electronic clearing-houses could be used to provide information on relevant programs and projects, accessible by Native American leaders and technology activists as well as federal personnel.

The strategy could be designed to: 1) help ensure that efforts to downsize and reinvent federal agencies give appropriate weight to Native telecommunications needs and legitimate Native projects; 2) encourage tribes, villages, and communities to assume self-direction and control where they have the interest and capability; and 3) establish new mechanisms for interagency and Native government-federal-state partnerships, for example, by crafting more creative and effective interagency agreements and coordinating mechanisms that pool resources and technical support.

Interagency coordination could help ensure that best use is made of scarce federal dollars for telecommunications education, training, pilot-testing, and infrastructure development in Native communities. Even under the best of circumstances, *finding the funds for Native American telecommunications will be difficult*. Native Americans need to make up for previous underinvestment in telecommunications at a time when most traditional funding sources are under increasing pressure, and other basic needs such as housing, food, roads, hospitals, and schools continue unabated. Only recently have Native groups begun to take advantage of grant or loan programs that, for example, provide support for educational technology, rural telephony, rural public radio, and grassroots computer networking. These are among the programs vulnerable to budget cuts.

Telecommunications Policy

Over the past two years, Native American telecommunications activists have asserted that *federal telecommunications policy ignores or contradicts the principles of Indian law and federal Indian policy*. Based on its research, OTA reached

a similar conclusion. The federal agencies with major responsibility for telecommunications policy, such as the FCC and NTIA, have not applied Indian law to telecommunications policy. The agencies with lead responsibility for Indian and other Native programs, such as the BIA, IHS, and ANA, do not have a Native American telecommunications policy, nor are they effectively engaged in the wider telecommunications policy debate. The federal government does not have a coherent focus on telecommunications policy as it relates to Native Americans.

The FCC and NTIA could initiate policy inquiries on Native American telecommunications, and invite active participation from tribal governments, Alaska Native and Native Hawaiian organizations, Native technology activists, state regulators, private companies, and the like. These policy initiatives could address both the need for and content of a government-wide policy statement and strategy, and specific topics like sovereignty and self-determination, universal access, and strategic partnerships.

Sovereignty and self-determination

At present, sovereignty is primarily applicable to Indian tribes and Alaska Native villages, and several options are possible. Tribal telecommunications law is in its infancy. Precedents from Indian law suggest that those tribes that wish to assume some degree of telecommunications authority and responsibility now vested in the states and the FCC could legally do so. Some tribes may wish to operate under current state and/or federal authority; others, especially the larger tribes, may choose to establish their own tribal telecommunications agency or authority. The existing balance of federal-state relationships would need to be adjusted to accommodate heightened tribal involvement. *A fundamental question is the extent of tribal authority over telecommunications on tribal lands (e.g., physical infrastructure) and in the air over tribal lands (e.g., frequency spectrum)*. The FCC could set up an office of tribal or Native American affairs, include tribal govern-

ments that so desire in regulatory proceedings on a basis similar to states, and over time develop a regulatory policy specifically on Native American telecommunications.

Universal access

Since 1934, federal telecommunications policy has, in effect, cross-subsidized low-density, high-cost rural areas with revenues from the high-volume, high-profit metropolitan areas and interstate routes—thereby improving rural access. *Many rural tribes and villages clearly have a continuing need for universal service fund (USF) cross-subsidies, both directly to Native-owned and -operated telecommunications companies and indirectly to other rural telephone cooperatives and companies that serve tribal or village areas.* Many rural Native Americans would be further disadvantaged if the USF were weakened or discontinued.

The current universal service mechanism could be strengthened by increasing the types and number of USF contributors, expanding the definition of universal service, and possibly creating minimum set-asides for Native rural areas. The implications of universal service options for rural Native areas could be explicitly addressed in ongoing FCC and NTIA policy inquiries. Tribes could be represented on the joint federal-state board that helps determine USF procedures and allocations.

Strategic partnerships

Strategic partnerships with tribes, villages, communities, and Native service providers could be encouraged by the FCC, NTIA, and Congress. Bell operating companies and other local phone companies, cable TV companies, long-distance carriers, competitive access carriers (including electric power utilities), computer companies, and rural telephone cooperatives serving or adjacent to Native American areas—or desiring to serve these areas—could be urged, required, or given incentives to upgrade service. This could be done in collaboration with Native leaders or even in formal partnership with newly created Native-owned telecommunications companies.

The Native telecommunications infrastructure could be given higher priority under the Rural Utilities Service (RUS) guaranteed or subsidized telephone loan programs and technical assistance activities. Native-owned companies are eligible, but few tribes or villages have the expertise or awareness to take advantage of RUS programs. A portion of NTIA and the Corporation for Public Broadcasting grant funds could be allocated to rural Native groups and governments for infrastructure development. These funds could be limited to loans, or some mix of loans and grants (including various forms of matching and incentive grants). The few tribes with significant gaming revenues could invest some portion of net profits into telecommunications, as a handful are already doing, and leverage gaming-related telecommunications facilities for broader tribal applications.

Information Policy

Federal officials need to explicitly consider Native American perspectives when formulating information policy. Native concerns about privacy and about cultural and intellectual property rights on the information superhighway are similar to those of other users. Two specific problems are: 1) controlling access to sensitive religious, spiritual, and ceremonial information transmitted electronically; and 2) protecting the integrity of the information content (e.g., Native artwork or traditional healing) from alteration, misrepresentation, or misuse. *As Native governments make more extensive use of telecommunications and computers, they will need to address a wide range of information policy issues.*

Indian tribes already have significant authority to set rules and regulate use of information on their own reservations. However, tribal members are citizens of both the tribe and the United States—thus constitutional and federal issues such as privacy, security, freedom of speech and press, and the like are relevant. Also, to the extent that tribal information flows electronically on an intertribal or interstate basis, Native American groups will need to collaborate with federal and state regulato-

ry authorities, commercial telecommunications companies, and a range of public and private sector users. Native American leaders and advocates will, in any event, need to participate more actively in federal and state information policymaking to ensure that Native views are fully considered.

Further Research and Evacuation

This is the first federal government report on Native American telecommunications. The report builds, in part, on the work of Native American activists and researchers who have been among the first to grasp the potential and risks of telecommunications (see box 1-3). *Clearly, the field of Native American telecommunications is still in its early stages. While some policy decisions could be responsibly made today, future applications and*

policymaking would benefit from significant, continued research on many of the topics discussed in this report.

Also, development of cost estimates was beyond the scope of this report, and will not be feasible until more detailed infrastructure requirements and options are specified. The absence of cost data need not delay strategic policy actions, however. Nor does this report consider the telecommunications needs of Native Americans living on other Pacific Islands such as the U.S. territories of Guam and American Samoa and the U.S. Commonwealth of the Northern Marianas Islands. An improved telecommunications infrastructure could help strengthen the ancestral, cultural, and economic ties between Native Hawaiians and Pacific Islander Americans.

BOX 1-3: Native Voices on Telecommunications

"For reasons which may become apparent over time, I have become a scout or a runner in this Internet. I drop songs as my offerings as I seek along this new migration path, the Cyber-Bearing Crossing, a new route for singing, a new trail for the dust of our clinging to the tribal contract with this sacred creation. "

—Turtle Heart (Ojibway Indian), *Johannesburg, CA*¹

"I want to see a dream become reality. If any American Indian wishes to communicate to another individual or tribe, that the capability to do so is available, so we can perpetuate our ways, language, and people into the far reaches of the future...As Sequoyah was included in history for his attempts, let us continue the good struggle for equality in communication, so we can all have a voice and be heard "

—Andrew Conseen Duff (Eastern Band of Cherokee), *Cherokee, NC*²

"Let us move forward to the future carrying with us the best from the past. The time has arrived for the revitalizing and reawakening of our community... Behind the project lies this vision: Native Hawaiians will be able to obtain information and referral to Hawaiian and other social services from a single point of access on each of the major Hawaiian Islands, "

—Haunani Apoliona, *Alu Like ("working, striving together, Natives of Hawaii")*, *Honolulu, HI*³

"Native Hawaiian peoples are in danger of being left behind in the telecommunications age., .[O]pportunities for employment, training, and 'bridging the communications gap'. .. between Native Hawaiians because of our island geography (especially in rural locales) would be enhanced by establishment of a 'Native Hawaiian Telecommunications Network.'"

—Ku Kahakalau and Jim Hunt, *Honoka'a, The Big Island, HI*

¹Dan Pacheco, "Circles of Light: Tribal Elders Finding Role for Wizardry of Internet," *Denver Post*, Mar 29 1995 p. 1F.

²Andrew Conseen Duff, "Community Initiative," statement prepared for the Americans for Indian Opportunity Ambassador Program, n.d. and "A Tradition of Information Gathering," statement prepared for the National Information Infrastructure hearings, Apr. 12, 1995, Santa Fe, NM

³Haunani Apoliona, "Toward Collective Action," Task Force on Hawaiian Services, Nov. 25, 1991, p 2, and "Multi-Service Centers Demonstration Project," *Alu Like Annual Report 1992*, Honolulu, HI, p 6

(continued)

BOX 1-3: Native Voices on Telecommunications (Cont'd.)

"More than twenty years ago, when the North Slope Borough was first formed, we dreamed of a locally controlled school system where our children would be able to obtain high school diplomas without ever leaving the North Slope...Who would have predicted that one day our students would shrink distances even further through the use of computers and sophisticated video networks?"

—Pat Aamodt, Superintendent, North Slope Borough School District (86 percent Inupiat Eskimos), Barrow, AK⁴

"Over the centuries, American Indians have not enjoyed the benefits of social and economic progress. Now poised at the beginning of an information revolution, we must ensure that Indians have access to the communications technologies that will enable them to participate in this revolution. "

—Bambi Kraus (Tlingit), National Indian Policy Center, Washington, DC⁵

"The need to clarify matters of tribal and federal jurisdiction in the field of telecommunications and information policy is now reaching a critical point...If tribes do not participate at this juncture, then tribes will be omitted entirely and will spend infinite resources to backpedal into this fast moving field. "

—Randy Ross (Otoe-Missouria Tribe), Rapid City SD, and Ellen R. Kemper, Esq., Santa Fe, NM⁷

⁴Ku Kahakalau and Jim Hunt, "Native Hawaiian Telecommunications Network, " n.d.

⁵"Annual Report 1993 -1994," North Slope Borough School District, Barrow, AK, p 5

⁶U.S. Congress, Senate, Committee on Indian Affairs, *Oversight Hearing To Examine the Feasibility Of Creating a Permanent Indian Research Center*, S. Hrg. 103-161, 103d Congress, 1st sess. (Washington, DC U S Government Printing Office, May 20, 1993)

⁷Randy Ross and Ellen R. Kemper, "Datafication in Tribal America, " paper prepared for the Aberdeen Area (SD) Tribal Chairmen's Health Board, July 25, 1994.

SOURCE Office of Technology Assessment, 1995

Federal policy could redirect agency research programs and encourage the development of centers of telecommunications expertise in Native organizations and universities that serve Native Americans. Federal agencies that support pilot projects and infrastructure development for Native American telecommunications could be required to include an evaluation component. The Office of Management and Budget could require the federal statistical agencies to improve the collection of data on American Indians, Alaska Natives, and Native Hawaiians—as individual racial and ethnic groups and as Native Americans collectively—with a special focus on demographics and telecommunications in rural Native areas.

Also, an appropriate federal agency, university research center, and/or Native organization could, for example: 1) conduct surveys of Native American telecommunications needs and infrastructure (see appendix C for an illustrative survey research instrument on baseline infrastructure); 2) maintain and update the Internet-accessible Native American Resource Page developed by OTA for this study (see figure 1-2 and appendix B); and 3) help the Native American research community make best use of the already significant range of telecommunications resources available to them (see box 1-1 and appendix A on computer networking for Native Americans).

FIGURE 1-2: Front Page of OTA's Native American Resource Page on the World Wide Web



Telecommunications Technology and Native Americans: Opportunities and Challenges

Project Information:

The Office of Technology Assessment's Industry, Telecommunications and Commerce program is in the process of conducting a study entitled *Telecommunications Technology and Native Americans: Opportunities and Challenges*. This study was requested by the Senate Committee on Indian Affairs and will address Native Americans, Alaskan Natives, and Native Hawaiians. For further information about this study, the Telecommunications and Native Americans project proposal and summary can be found on the Office of Technology Assessment's ftp server.

OTA Homepage URL: <http://www.ota.gov/>

OTA ftp server URL: <ftp://otabbs.ota.gov/>

On-line Resource Categories:

Government Resources

Art and Cultural Resources

Academic Resources

Organizations and Networks

See appendix B for further details.

SOURCE: Office of Technology Assessment, 1995.