
Steps Toward a Global Information Infrastructure

Assistant Secretary Larry Irving*

Co-Authors: Janet Hernandez**

Wendy C. Chow ***

I. Introduction

Many of the technologies that either exist or are being developed today-computers, cellular telephones, video telephones, personal communications systems, and fiber-optic cables-were unknown and unanticipated when the Communications Act was enacted. Today, approximately 5 million computer users in the United States have e-mail addresses, and Internet is used worldwide by 15-20 million users.[\(note 1\)](#) These changes in technology and the marketplace have been spurred by a number of developments. First, the emergence of information as a vital economic resource and the related need to communicate, manage, and use information have encouraged the creation of new products and services.[\(note 2\)](#) Second, the increasingly multinational nature of business operations has created a demand for seamless telecommunications services that traverse national boundaries.[\(note 3\)](#) Finally, liberalized policies governing the provision of international telecommunications services have inspired expansion of these services.[\(note 4\)](#)

The Clinton administration, recognizing that in an information-driven world access to information and communications technologies is essential to the United States's economic and social development, considers continued telecommunications development to be among this country's highest priorities. Reform of telecommunications laws constitutes a critical step in addressing the technological advances and convergences that are occurring.[\(note 5\)](#) Consequently, the administration is pursuing a two-pronged approach to telecommunications reform. On the federal level, we support legislative proposals that remove outdated regulatory structures and promote the development of a National Information Infrastructure. In addition, a number of states are already at the forefront of the movement to advance their information infrastructures and have served as active testbeds for telecommunications reform. The administration is working closely with state officials to develop models for reform that can be implemented at both federal and state levels. It is our belief that initially addressing technological changes through legislative and regulatory reform will facilitate further U.S. development of a National Information Infrastructure and result in greater U.S. participation in the emerging Global Information Infrastructure. At the same time, we also are aware of the need to encourage other countries to recognize the importance of telecommunications and facilitate its development through appropriate policies.

This Essay examines the principles underlying the National and Global Information Infrastructure initiatives and describes how the administration's policies seek to implement these principles, with the goal of ensuring that the domestic networks of individual countries will be easily accessible to the global information highways of the future. In particular, this Essay discusses how the administration is trying to implement these principles on both a national level through its policies regarding modification of the Communications Act, and on a global level through participation in a number of international activities.

II. Necessary Steps for Creation of a Global Information Infrastructure

The Clinton administration has articulated five principles for developing our own National Information Infrastructure. These principles are: (1) encouraging private investment; (2) promoting competition; (3) creating a flexible regulatory framework that can keep pace with rapid technological and market changes; (4) providing open access to telecommunications networks for all information providers; and (5) ensuring universal service. As Vice President Gore stated at the First World Telecommunication Development Conference held by the International Telecommunication Union (ITU), these same five principles are equally applicable in the international community and are necessary

elements to realizing a Global Information Infrastructure.[\(note 6\)](#) As discussed below, the United States and other members of the international community are making specific concerted efforts to promote these principles.

A.Encouraging Private Investment and Competition

Taken together, private investment and competition form the foundation for the development of our National Information Infrastructure, as well as the Global Information Infrastructure. The ultimate success of both initiatives depends on the participation of the private sector, which will include the principal investors, builders, operators, and owners of these infrastructures. Increased private sector participation at the national level will spur telecommunications development and enhance competition, thereby making the telecommunications sector more efficient and innovative globally.

With the break-up of AT&T in 1984 and the introduction of competition in the U.S. long-distance market, the number of long-distance providers has grown to over 500 and long-distance prices have decreased approximately 60 percent.[\(note 7\)](#) The administration expects that certain legislative reform proposals would create similar benefits by encouraging further private investment and promoting competition in the local telephony market. Such proposals include provisions that would remove barriers to entry for new competitors and impose affirmative requirements that effectuate interconnection and interoperability of telecommunications systems. Furthermore, removal of the current restrictions on cable-telco cross-ownership, subject to certain conditions, also would promote competition in multimedia services markets.

Many states have already adopted measures to spur competition. Currently, thirty-two states allow interLATA competition and thirty-four states permit competition within LATAs.[\(note 8\)](#) In addition, many states have authorized competitive access providers (CAPs) to provide local services.[\(note 9\)](#) The administration is eager to explore the opportunities such testbeds for reform have created and work with the states to ensure that the advantages stemming from such reform can be shared by all.

In the international community, developed and developing countries alike also are recognizing that private investment and competition are crucial to telecommunications development. Over the last decade, more than twelve countries have undergone privatization efforts, and it is anticipated that at least as many will begin similar initiatives during the next five years.[\(note 10\)](#) These endeavors offer substantial social and economic benefits. In Chile, for example, prior to privatization the number of main telephone lines increased at a rate of 7.5 percent per year; since privatization, the number of main telephone lines has increased at a rate of more than 25 percent per year. The United Kingdom also has indicated that the introduction of competition has increased the number of households using telephone service from 78 percent in 1984 to 90 percent in 1994.[\(note 11\)](#)

The administration encourages more commitment to competition and private investment. Internationally, we recognize that as a result of anticompetitive policies and monopolistic regimes, our U.S. companies continue to encounter numerous obstacles that impede access to foreign markets. During the past year, the administration has participated in a number of international activities, including bilateral meetings and international conferences for the purpose of encouraging other countries to adopt procompetitive policies and eliminate the roadblocks to the development of a Global Information Infrastructure.

B.Promoting a Flexible Regulatory Framework

The Clinton administration believes that only a flexible regulatory environment capable of promoting competition, investment, innovation, and consumer interests will-on a technology-neutral basis-encourage private sector investment and optimize open market initiatives. The administration therefore supports amendments to the Communications Act that will ensure that regulation facilitates or supplements, rather than hampers, the workings of the marketplace and as the marketplace evolves, outmoded and unnecessary forms of regulation do not hinder its growth. In addition, the administration supports statutory reform designed to ensure that competing federal and state regulations do not impose conflicting or duplicative regulatory obligations on telecommunications providers.

Many states have already implemented innovative regulatory frameworks in an effort to accommodate the changing marketplace. California, Michigan, Kansas, and others have adopted incentive regulatory plans in an effort to promote the goals of network modernization and economic development. Under these plans, regulated telephone companies agree to upgrade their networks and constrain rate increases to some level below inflation in return for being freed from the profit constraints of traditional rate-of-return regulation.[\(note 12\)](#) Some states are also eliminating or streamlining regulation of certain services deemed competitive. Currently, commissions in thirty states and the District of Columbia allow local exchange carriers to price certain services to meet competition.[\(note 13\)](#) The administration intends to work in concert with state regulators to expand and improve upon flexible regulatory models for implementation at both the federal and state levels.

We recognize that in the international community, countries are at different stages of telecommunications development and have varying levels of experience with regulatory reforms. Countries currently pursuing national information infrastructure initiatives include the twelve European Union nations, as well as Canada, Australia, Japan, Korea, Malaysia, and the Philippines. Other countries are just beginning to introduce competition and are being confronted with the need to reform their monopoly structures.[\(note 14\)](#) Although there is no perfect blueprint approach to regulatory reform, it is critical that these countries adopt regulatory structures that can accommodate modifications as well as respond to changes in the marketplace.[\(note 15\)](#)

The administration is committed to participating in international activities through international and regional organizations such as the Organization for Economic Development, Comisin Interamericana de Telecomunicaciones, the International Telecommunication Union, the Asia-Pacific Economic Cooperation, and through bilateral meetings. The administration anticipates using these fora to advance the view that the development of national infrastructure initiatives should be promoted through effective regulations that contain appropriate safeguards to protect competition and provide assurances that new entrants can participate in the marketplace. Likewise, we are eager to share our regulatory experiences with those countries that are beginning to revamp their telecommunications regimes and thus join in the development of the Global Information Infrastructure.

C. Providing Open Access to Telecommunications Networks

The administration recognizes that to create truly seamless networks throughout the global community, information providers must be able to obtain access to all networks free of unwarranted barriers. Open access will ensure that both the networks and the information provided over the networks are open and accessible to all-service providers as well as consumers. Potentially, every network user will one day be able to use thousands of different sources of information-from every country and in every language.

Several legislative reform proposals contain provisions to promote open access, including conditions to promote standards for interconnection and interoperability, as well as requirements for nondiscriminatory access to network facilities, services, functions, and information on an unbundled basis.[\(note 16\)](#) The notion of open access is steadily gaining support around the nation, as evidenced by numerous interconnection initiatives at the state level. For example, in 1989, the New York Public Service Commission ordered New York Telephone to interconnect with competing local exchange carriers (LECs) in New York City.[\(note 17\)](#) Furthermore, LECs themselves have become more willing to allow interconnection into their local networks. Bell Atlantic in New Jersey, United Telecommunications in Florida, NYNEX in New England, Ameritech in Illinois, and Pacific Telesis in Los Angeles and San Francisco all have allowed interconnection by alternative providers.[\(note 18\)](#) These steps toward interconnection represent an effort to ensure that our own National Information Infrastructure will do its part to function seamlessly in an interconnected world.

In addition to national efforts, it is equally critical that other countries encourage open access by all information providers and for all consumers on reasonable and nondiscriminatory terms. Today, the international arena is beset with a multiplicity of different technical standards, formats, and requirements that make interconnection and interoperability, and therefore communications, very difficult. One of the administration's goals is to continue our active participation in international standard-setting activities and encourage other countries to ensure that interoperability of networks-among countries, networks, and individual users and information providers-is afforded the

highest priority. The United States has played a leadership role in the international standardization process developed through the ITU, the International Electrotechnical Commission, and the International Organization for Standardization. It also has illustrated its commitment to global telecommunications standardization through the establishment of Committee T1, which develops national telecommunications network standards for the United States and drafts and proposes U.S. technical contributions to the ITU.[\(note 19\)](#)

D.Ensuring Universal Service

The administration considers it critical that telecommunications not be solely available to the "haves" of the world. Although the definition of universal service may vary from country to country, the administration has a vision of universal service for the United States that will make essential services available at affordable prices to persons of all income levels, regardless of geographic location, disability, or other restrictions. To promote a truly Global Information Infrastructure, universal service goals must ensure that the infrastructure and the services it transmits are available to all members of our society.

Currently, Section 1 of the Communications Act, which requires the Federal Communications Commission to regulate interstate and foreign communications "so as to make available, so far as possible, to all the people of the United States a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges,"[\(note 20\)](#) has long provided the underpinnings for U.S. universal service policies. Achievement and expansion of universal service should now become a more explicit and more clearly articulated goal of U.S. policy and legislation.

Some states are leading the way toward attaining this goal through creative policymaking within their own boundaries. For example, New York has developed a program that enables low-income households to receive basic service for as little as one dollar per month plus usage charges, with installation charges as low as ten dollars. A proposal to require all providers (including some cable systems) to contribute toward universal service expenses also is being considered in New York.[\(note 21\)](#) California has established a fund to provide telecommunications equipment and services for the deaf and others with disabilities. California also requires telephone companies to contribute toward a fund that helps low-income households receive telephone service.[\(note 22\)](#)

In many countries outside the United States, universal service remains an important but difficult goal to attain. At the end of 1992, more than fifty countries across the globe had less than one telephone per 100 people.[\(note 23\)](#) In addition, approximately fifty million people are on "official" waiting lists for telephone lines.[\(note 24\)](#) For many countries, the concept of universal service is a lofty goal that is virtually unattainable in the near term. We recognize that different countries are at different stages of development and may have more pressing basic needs and priorities.

III.Conclusion

As we celebrate the sixtieth anniversary of the Communications Act of 1934, we commend the efforts of all those who have been responsible for a flexible statutory framework that has allowed innovation to flourish in the telecommunications industry. It is now time, however, to reform the Act to eliminate outmoded regulatory distinctions and to add greater regulatory flexibility needed in today's communications marketplace-both domestically and internationally. Legislative and regulatory telecommunications reforms will better position us to effectuate the five principles set forth in our National and Global Information Infrastructure initiatives. Given that the Global Information Infrastructure will best succeed with the cooperation of each country, it is equally important that we advocate these principles internationally through bilateral meetings, regional and international organizations, international conferences, and various other international activities. The administration is fully committed to undertaking both the domestic and international steps necessary to ensure the successful evolution of a network of networks; these steps are critical to achieving worldwide economic, social, and telecommunications development for the betterment of all.

Notes

* Assistant Secretary for Communications and Information and the Administrator of the National Telecommunications and Information Administration (NTIA), U.S. Department of Commerce. From 1987 to 1993, Mr. Irving was the Senior Counsel to the U.S. House of Representatives Subcommittee on Telecommunications and Finance, and from 1983 until 1987, he served as Legislative Director and Counsel to the late Congressman Mickey Leland (D-Texas). Prior to joining Congressman Leland's staff, Mr. Irving was associated for three years with the Washington, D.C. law firm of Hogan and Hartson. He is a graduate of the Stanford University School of Law and Northwestern University. [Return to text](#)

**J.D. University of Pennsylvania, 1991; Attorney-Advisor, NTIA, Office of Chief Counsel (1993-1994). [Return to text](#)

***J.D. Candidate, Georgetown University Law Center, 1995; Law Clerk, NTIA, Office of Chief Counsel. [Return to text](#)

1. *The Third Age: The Computer Industry*, Economist, Sept. 17, 1994 (special survey section), at 1, 15. [Return to text](#)
2. In 1991, U.S. companies for the first time spent more money on computer and communications equipment than on industrial, mining, farming, and manufacturing machinery. Thomas A. Stewart, *The Information Age in Charts*, Fortune, Apr. 4, 1994, at 75, 75. [Return to text](#)
3. Keith Bernard, *New Global Network Arrangements-Regulatory and Trade Considerations*, 18 Telecommunications Pol'y 378, 378 (1994). [Return to text](#)
4. *Id.* [Return to text](#)
5. Despite the revolutionary technological changes occurring in the world of telecommunications, the fundamental laws governing telecommunications in the United States have not been revised in a comprehensive manner since the Communications Act of 1934 was enacted. As is well recognized, over the last 60 years, piecemeal revisions to the Act have been made to accommodate the emergence of new technologies. For example, the Communications Satellite Act of 1962 gave the FCC additional authority to regulate satellite technology. Pub. L. No. 87-624, 76 Stat. 419 (codified as amended in scattered sections of 47 U.S.C. 701-57 (1988 & Supp. IV 1992)). The Cable Communications Policy Act of 1984, Pub. L. No. 98-549, 98 Stat. 2779 (codified as amended in scattered sections of 47 U.S.C. (1988)), imposed a number of restraints on local government regulation of cable. Finally, the Cable Television Consumer Protection and Competition Act of 1992, Pub. L. No. 102-385, 106 Stat. 1460 (codified in scattered sections of 47 U.S.C. 521-611 (Supp. IV 1992)), increased consumer protection and competition in the cable television and related markets. [Return to text](#)
6. Vice President Al Gore, Inaugural Speech at the International Telecommunication Union World Telecommunication Development Conference (Mar. 21, 1994) (copy on file with Author). [Return to text](#)
7. See Letter from Gerald J. Kovach, MCI, to Clarence L. Irving, Jr., NTIA (June 9, 1994) (copy on file with Author). [Return to text](#)
8. Vivian Witkind Davis et al., Status of Alternative Regulation in Telecommunications 4 (1994). [Return to text](#)
9. CAPs presently hold state certification to provide some or all local phone services in 46 % of the states. 1994 State Telephone Regulation Report 1 (Herb Kirchhoff, ed.). [Return to text](#)
10. International Telecommunication Union, World Telecommunications Dev. Report 71 (1994) [hereinafter ITU]. [Return to text](#)

11. See J.M. Hammond, Submitted Statement for the International Telecommunications Hearings (Aug. 12, 1994) (copy on file with Author). [Return to text](#)
12. National Telecommunications and Info. Admin., U.S. Dep't of Commerce, The NTIA Infrastructure Report: Telecommunications in the Age of Information 38 (1991) [hereinafter Infrastructure Report]. [Return to text](#)
13. Witkind Davis et al., *supra* note 8, at 3. [Return to text](#)
14. Leslie Helm, *Battling for a Piece of the Global Pie*, L.A. Times, July 26, 1994, at C2. [Return to text](#)
15. See Richard D. Stern, *Alternatives for the Future*, in Restructuring and Managing the Telecommunications Sector 125 (Bjrn Wellenius et al. eds., 1989). [Return to text](#)
16. See generally S. 1822, 103d Cong., 2d Sess. (1994); H.R. 3626, 103d Cong., 1st Sess. (1993). [Return to text](#)
17. Infrastructure Report, *supra* note 12, at 275. [Return to text](#)
18. *Id.* at 275-76. [Return to text](#)
19. See Arthur K. Reilly, Statement at Panel One of the International Telecommunications Hearings, Component Technologies of the NII/GII (July 27, 1994) (copy on file with Author). [Return to text](#)
20. 47 U.S.C. 151 (1988). [Return to text](#)
21. National Reg. Research Inst., Universal Service in the United States: Dimensions of the Debate 92, 94 (1994). [Return to text](#)
22. *Id.* at 89-90. [Return to text](#)
23. ITU, *supra* note 10, at 73. [Return to text](#)
24. *Id.* at 72. [Return to text](#)