Racial Minorities and the Quest to Narrow the Digital Divide: Redefining the Concept of “Universal Service”

Patricia M. Worthy

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Racial Minorities and the Quest to Narrow the Digital Divide: Redefining the Concept of “Universal Service”

by

PATRICIA M. WORTHY

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Introduction

The future of the United States as a nation depends, in large measure, on its ability to achieve equality for each member of its society. Telecommunications and computer technologies have the potential to ensure the economic, educational and social parity necessary to achieve that end.\(^1\) The Federal Communications Commission (hereafter “the Commission” or “FCC”), and the U.S. Congress have appropriately recognized the potential power of these technologies. They have, through statutory mandates and regulatory policies, implemented various initiatives to achieve a universally level “playing field.” The Commission’s regulatory actions and Congress’s enactment of the Telecommunications Act of 1996 (hereafter “the Act” or “the 1996 Act”),\(^2\) all speak to a commitment on the part of these two bodies to guard against the actualization of a nation of information “haves” and “have-nots”—or stated differently, one that is “digitally divided.”\(^3\)

Since 1984, federal agencies in the United States have implemented several regulatory programs aimed at ensuring the universality of telephone service. These programs have cost American taxpayers billions of dollars.\(^4\) Numerous explanations have been offered regarding what is meant by universal service. As attested in a study, the U.S. Commerce Department’s National Telecommunications and Information Administration (NTIA) reported:

Although there are various notions of what currently constitutes “basic telephone service” for universal service purposes, one

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1. Federal Communication Commission Chairman William E. Kennard, has stated “that ensuring that all Americans have access to technology is the civil rights challenge of this new millennium.” Commencement Address at Howard University, Washington, D.C. (May 13, 2000) (on file with the author).
4. There are estimates that in the early 1980s the impact associated with regulatory pricing policies, established to ensure universal service, was approximately $1.5 billion annually. Ross C. Eriksson, David L. Kaserman & John W. Mayo, Targeted and Untargeted Subsidy Schemes: Evidence from Postdivestiture Efforts to Promote Universal Telephone Service, 41 AI.J.L. & ECON. 477, 480 (citing James M. Griffen, The Welfare Implications of Externalities and Price-Elasticities for Telecommunications Pricing, 64 REV. ECON. & STAT. 59 (1982)). See further discussion infra at Part II.A.
reasonable definition might include one-part voice-grade service with rotary dialing, the ability to receive incoming calls and place outgoing calls, access to local and toll service, and direct dialing of local and domestic toll calls.\(^5\)

The notion that everyone should be provided the opportunity to receive basic telephone service at an affordable rate, regardless of geographic location or economic status, has been widely adopted as national policy. The goal of quality, widely available and reasonably priced telephone service has been achieved through a myriad of regulatory policies such as rate averaging, cost support funds and loan programs.\(^6\) As one commentator noted regarding the historical development of the U.S. telephone system, “it appears that almost everything conceivable has been done to make telephone service more affordable to residential consumers through a system of transfer payments.”\(^7\)

The Telecommunications Act of 1996 has an entire section devoted to universal service.\(^8\) The 1996 Act not only requires the FCC to define what is meant by universal service but also makes it clear that universal service obligations need not be confined to traditional telephone service. It also requires that universal service be an “evolving level of telecommunications services,” and that its definition should take into account advances in telecommunications technology.\(^9\) Moreover, the 1996 Act provides the Commission with a mandate to periodically reevaluate its definition in light of “advances in telecommunications and information technologies.”\(^10\) It also grants the Commission the authority to identify those telecommunications services that are to be supported by the universal service support mechanisms.\(^11\) In carrying out this mandate, however, the FCC has narrowly construed the types of services available for support from its Universal Service Fund. It has limited the reach of the 1996 Act’s benefits to no more than single-party, voice-grade access to the nation’s public switched telephone network, including touch-tone

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6. See discussion infra at Part II.A.
8. § 254(b) of the Act, supra note 2.
9. § 254(c) of the Act, supra note 2.
10. Id.
11. § 254(c)(1) of the Act, supra note 2.
signaling and access to emergency services, operator services and directory assistance.\(^\text{12}\)

Though universal service goals traditionally have focused on promoting telephone subscribership, the clear mandate of the 1996 Act suggests an opportunity to view national universal service objectives more broadly and to incorporate the maximization of the availability of technologically-advanced services and facilities. For the information have-nots in our society, the inclusion of more advanced technologies in the evolving definition of universal service, perhaps even computers and Internet access, provides a highly plausible solution.

Thirty years ago, when the U.S. telephone network was a government sanctioned monopoly, telephone sets—known as customer premise equipment (“CPE”)—were provided exclusively by local telephone companies as part of basic telephone service and thus included within the concept of universal service. As the rules were changed to accommodate competition and the resulting emergence of alternative CPE suppliers, the rationale for universal provision of telephone instruments by telephone companies dissipated. Telephones were deregulated and removed or unbundled from the list of services in the basic universal service category because they were affordable, transportable and subject to uniform network-interconnection standards.

Computers, one could easily argue, are nothing more than highly complex telecommunication devices connected to a telecommunications network. Thus, computers could credibly be provided as part of basic telephone or telecommunication services.\(^\text{13}\) A more recent NTIA study, *Falling Through the Net: Defining the Digital Divide*, has suggested that race and economics play a


\(^{13}\) See Borrows, Bernt & Lawson, Universal Service in the United States: Dimensions of the Debate, NRRI at 26 (June 1994) suggesting that the issue of CPE as part of the definition of universal service is surfacing due to affordability concerns pertaining to ISDN and disabled customers. In fact, they state:

CPE affordability is discussed in terms of its potential to deny access to advanced education methods to poorer school systems or poorer students. Access to educational opportunity is as much of the American agenda as is universal telephone service.

*Id.* at 30.
significant role in a household’s access to telephones and computers. The study revealed that from 1994 to 1998, the gap between ownership of computers in white and black U.S. households widened by 39.2 percent.\(^\text{14}\) Although the Internet is consistently touted as the “newest educational tool,” the NTIA study maintained that income and education are the determinant factors to technology access, and therefore, Americans with less education, who would probably benefit most from the Internet’s education value, are being left behind.\(^\text{15}\) These findings suggest that the FCC’s efforts to implement the universal service provisions of the 1996 Act thus far have fallen far short of the promise and potential initially envisioned. Given the substantial financial commitment we as a nation have made and continue to make to ensure accessibility and affordability of basic telephone service, perhaps we should embrace a similar commitment to arrest the further widening of the digital divide.

Part I of this article provides a brief history of the birth and evolution of the concept of universal service. Part II describes the federal regulatory programs that were established to ensure that access to telephone service was universally achieved. Part III presents a brief discussion of Congressional efforts to codify and broaden the concept of universal service, including an analysis of the 1996 Act’s universal service provisions. Part IV discusses the FCC’s implementation of those provisions and offers an assessment of that effort. Part V provides suggestions for alternative regulatory approaches to mitigate the growing disparities between our nation’s information have and have-nots, including the provisioning of network access and personal computers to low-income families.

I. The Evolving History of Universal Service

The origins of the term “universal service” are indistinct. Some believe the phrase was first used in 1907 by Theodore N. Vail, then president of the American Telephone and Telegraph Company (hereafter “AT&T”).\(^\text{16}\) Vail foresaw universal service as an essential

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15. *Id.* at 9.
component of AT&T's vision and “operating credo.” The Bell System was founded on the broad lines of “One System,” “One Policy,” “Universal Service,” on the idea that no aggregation of isolated independent systems not under common control, however well built or equipped, could give the country the service. One system with a common policy, common purpose, and common action; comprehensive, universal, interdependent, intercommunicating like the highway system of the country, extending from every door to every other door, affording electrical communication of every kind from every one and every place to every one at every other place.

The slogan “One policy, One system, Universal service” is found repeatedly in AT&T annual reports between 1907 and 1914. Its use was motivated by the fierce competition that evolved between the Bell System and the thousands of emerging independent telephone companies. Competition in the various towns and cities across the nation took the form of “dual service” agreements: Bell exchanges could not be used to make connections with subscribers of a competing independent exchange in the same or another city; therefore, customers who joined one telephone system could not call customers using another company without subscribing to both systems. It is clear then that, to Vail, universal service was not

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19. Fraser, supra note 16, at 3.

20. Due to basic incompatibility or a lack of interconnection, competing local phone companies were often unable to connect their respective customers to each other. “Dual Service” or subscribing to both services with the attendant duplicate wiring and equipment was common. In fact, author Milton Mueller explains:

“Dual Service” was the contemporary name for competing non-interconnected telephone exchanges in the same community. Dual service diverges so radically from our current universally interconnected telephone system that it is hard to appreciate just how widespread and long-lived the phenomenon was. It existed in some form for thirty years, from 1894 to 1924. From 1900 to 1910, at least 45 percent of the U.S. cities with populations over 5,000 had competing, non-interconnected telephone exchanges. During the peak of the independent movement’s strength, between 1902 and 1910, that percentage was more than 55 percent.
merely a social goal but instead a sound corporate strategy for eliminating competition and establishing ubiquitous interconnection for the Bell System.\(^{21}\)

Others have maintained that universal service, in the context of the telecommunications industry, traditionally has represented the goal of “affordable telephone service for all Americans.”\(^{22}\) They have argued that the pursuit of universal service has been both a national policy and a basic FCC mandate. For support, these proponents have relied on the language of the Communications Act of 1934, which calls for the following:

\[
\text{[f]or the purpose of regulating interstate and foreign commerce in communication by wire and radio so as to make available, so far as possible, to all the people of the United States, without discrimination on the basis of race, color, religion, national origin, or sex, a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges . . . .\(\text{[...]}\)\]}

It is clear from each of these arguments that the goal of universal service was a critical and vital element of federal regulatory policy.\(^{24}\)

**MUELLER, supra** note 16, at 7.

21. Author Gerald W. Brock states:

Vail’s vision infused the Bell System with a new coherence. “Universal service” became a competitive strategy, a political slogan and a catchy advertising term all in one. Instead of fighting to eliminate all independents, it would absorb them into the “universal” system by making them noncompetitive feeders through sublicensing. Above all, universal service was the spearhead of Vail’s drive to achieve political support for the elimination of competition and the establishment of regulated monopoly.

**Fraser, supra** note 16, at 3 (citing GERALD W. B ROCK, T HE TELECOMMUNICATIONS INDUSTRY 151 (1981)).


23. 47 U.S.C. §151 (1994) (emphasis added). The 1934 Act was not, however, the first federal statute regulating telecommunications. In 1910, Congress enacted the Mann-Elkins Act, giving regulatory jurisdiction for interstate telecommunications to the Interstate Commerce Commission. The 1910 Act defined telephone companies as “common carriers” who were “to provide service on request at just and reasonable rates, without unjust discrimination or undue preference.” Mann-Elkins Act, 1910 Pub. L. No. 61-218, 36 Stat. 539 (1934) (codified as amended at 47 U.S.C. § 601 (1934)).

24. When, for example, telephone ownership in rural America lagged behind the national average in the 1940’s, Congress amended the Rural Electrification Act of 1936 to create, in 1949, loan programs to help ensure:

that adequate telephone service be made generally available in rural areas through the improvement and expansion of existing telephone facilities and the construction and operation of such additional facilities as are required to assure the availability of adequate telephone service to the widest practicable number of rural users of such service.
II. Federal Regulatory Approaches to Universal Service Goals

A. FCC Implementation

In the early years of telecommunications regulation, the goal of universal service was pursued primarily through regulatory mechanisms adopted by the FCC and the state public utility commissions ("PUCs"). These entities developed a series of policies and regulatory approaches whose purpose was to ensure that basic local telephone service was available universally, and at an affordable rate. These early efforts focused first and foremost on practices that created subsidies or "transfer payments" based on pricing and cost-allocation directives.

Telephone services are provided over jointly used facilities. The same loop—that is, the same local telephone company switch—and the same trunk facilities between local telephone company switches are used to provide both local and long distance services. Given their dual nature, a method to regulate the costs and revenues associated with these joint facilities and services had to be developed. The Communications Act of 1934 provided the necessary methodology, by dividing regulatory authority between the federal government and the states. The FCC was assigned the authority to regulate the conduct of interstate communications, and the states were given


Moreover, the Rural Electrification Act was amended in 1989 to encourage loans to support data communications capabilities such as the deployment of fiber optic lines. Rural Economic Development Act of 1989, H.R. 3581, 101 Cong. §§ 702, 722 (1989). The Rural Electrification Administration (hereafter "REA") of the United States Department of Agriculture is still in operation providing direct loans to small telephone companies that serve rural areas from the Rural Electrification and Telephone Revolving Fund, and the Rural Telephone Bank. BORROW, ET AL., UNIVERSAL SERVICE IN THE UNITED STATES: DIMENSIONS OF THE DEBATE, 77 (1994). See discussion infra at Part IV.B.1.

The earliest discussions of universal service as a social goal took place in the state regulatory arenas. In 1915, the Montana PUC discussing universal service as a cost issue explained, “[W]hen a public service corporation is serving the public . . . the company must, in exchange, render dependable service and the fact that a branch line . . . does not of itself pay, while the main system itself is enjoying prosperity, is not a good and sufficient reason for undependable service.” Shield Valley Commercial Club v. Mountain States Tel. & Tel. Co., P.U.R. (1915A) 945, 948 (Montana PSC), quoted in OPASTCO, Universal Service at 5 (on file with author).

regulatory responsibility of intrastate communications. This statutory scheme reflected the Supreme Court’s holding in *Smith v. Illinois Bell Telephone Co.*, in which the Court determined that the costs associated with “property used in the interstate service” must be included in interstate toll rates, which were under federal control. Thus, the cost of jointly used local telephone company facilities was allocated between the interstate and intrastate jurisdictions. This regulatory process, known as “separations,” allocated costs on a basis that became known as the subscriber line usage factor (“SLU”). SLU measured and allocated joint costs based on the relative percentage of minutes used, which were either interstate or intrastate in nature. This approach, however, was abandoned in 1971 when the FCC and the states adopted the Ozark Plan.

The most critical element of the Ozark Plan was the establishment of a new cost allocation determinant known as the subscriber plant factor (“SPF”). The SPF was applied to the non-traffic-sensitive (“NTS”) plant, or that aspect of the telephone

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27. See 47 U.S.C. § 152(b). The 1934 Act grants the FCC the authority to regulate the conduct of communications “common carriers.” A communications common carrier is defined under the law as one whose services are opened to public hire for handling interstate or international communications electrical means. 47 U.S.C. § 153 (10) (Supp. II 1996). The 1934 Act’s key provisions were requirements that carriers’ rates be embodied in published tariffs (See 47 U.S.C. § 20(a) (1994)) and be just, reasonable, and nondiscriminatory. (See §§ 201(b), 202(a)). Carriers were also required to interconnect with other carriers, and to obtain agency permission before building or acquiring new lines. (See § 214). The FCC had the power to prescribe just and reasonable charges (See § 205) to suspend and investigate tariffs (See § 204) and to award damages (See §§ 206-09). The FCC administered these provisions with such goals as safeguarding against anticompetitive behavior, minimizing the potential for improper cross-subsidization and protecting the quality and efficiency of telephone service (See Amendment of § 64.702 of the Commissions Rules and Regulations, 72 F.C.C. 2d 358, 389-90 (1979)). The states generally offered regional common carriers an exclusive franchise in exchange for some level of commitment to universal service. Since common carriers were authorized specific rates of return on invested capital, they could not complain about such service obligations. Under this regulatory scheme, the additional costs associated with universal service were recovered through various pricing mechanisms. State regulators allowed carriers to charge certain subscribers prices above cost to offset below-cost pricing for customers whose service was more expensive to provide.


29. Id. at 148-49.

30. Prior to 1943, AT&T recovered all of its subscriber line costs through charges for local service. AT&T used a “board-to-board” system, whereby long distance calls were set to recover only those costs incurred to transmit calls from the originating toll board to the terminating toll board. None of the costs of the local exchange were recovered from toll calls. This situation changed, however, in 1943, as a consequence of *Smith v. Illinois*. CCB BRIEFING PAPER, supra note 26, at 92.

31. Pricing telephony services at actual cost in the telephone business often requires knowing whether the costs and price of a specific service are usage-based. In other words,
network that contains fixed costs such as the costs telephone carriers must incur to provide a service, regardless of the amount of service ultimately purchased by their customers (i.e., wires, poles, switching equipment, etc.). This equipment provides customers with access to local telephone networks—namely a dial tone. The costs of providing access are described as fixed because they remain constant even if no customer ever actually places a call.  

Under the SPF regulatory regime, significant amounts of investment and associated expense were allocated to interstate jurisdictions for access to the local loops. In this way, AT&T increased its per-minute long-distance rates to reflect that portion of local plant costs assigned to interstate jurisdictions, and it returned the corresponding revenues to the local companies who for the most part were its subsidiaries. Thus, the reimbursement was just a division of revenues within the AT&T corporate family. With the advent of long-distance competition, new long-distance carriers, such as MCI and Sprint, began to make similar payments. These competitors, also known as interexchange carriers or IXCs, however, were receiving technically inferior access arrangements compared to AT&T. Moreover, widespread discrimination was evident with regard to the charges these access customers were paying for the same “access-like” services. AT&T paid a rate that included subsidies for local telephone service. The competing long-distance companies paid discounted rates that reflected their inferior quality interconnections.

knowing whether the costs and price vary on the basis of how much the service is used. These usage-based costs are called “traffic-sensitive,” and costs that are not usage-based, are described as “fixed” or “non-traffic-sensitive.” CCB BRIEFING PAPER, supra note 26, at 31.

32. While usage-based or variable costs include expenses necessary to operate switches and transmit signals, and a share of the cost of billing and collection. Moreover, because networks must provide a certain level of reliability, a portion of the system’s capacity costs also varies at periods of peak customer demand for access. The greater the volume of calls, the greater the amount of variable costs. Livia Solange West, Deregulating Telecommunications, 9 DEPAUL BUS. L. J. 159, 168 (1996).

33. State regulators supported the change because it reduced the costs that needed to be recovered from basic local rates. The FCC approved the change, because it agreed with the notion that keeping basic local rates low-cost was an appropriate way to make telephone service more affordable to consumers nationwide. CCB BRIEFING PAPER, supra note 26, at 92 (citing RICHARD GABEL, DEVELOPMENT OF SEPARATIONS PRINCIPLES IN THE TELEPHONE INDUSTRY 128 (1967)).

34. Interstate access services are offered by local exchange carriers (“LECs”) and provide access to the local exchange plant, thus enabling a customer to place and complete interstate long-distance calls. 47 C.F.R. § 69 (1992). Access services are defined in the rules as “services and facilities provided for the origination and termination of any interstate or foreign telecommunication.” 47 C.F.R. §69.2(b) (1992).
The FCC found these varying rates to be unreasonably discriminatory, causing an adverse effect on competition in the long distance marketplace.

The telecommunications industry was experiencing other significant structural and regulatory changes. In 1982, based upon a settlement between the parties, the United States District Court in Washington, D.C. entered a consent decree in the pending antitrust case between AT&T and the U.S. Department of Justice.\(^{35}\) The decision, later known as the Modified Final Judgment (MFJ), required AT&T to divest itself of its twenty-two local telephone companies.\(^{36}\) AT&T was allowed to retain several major subsidiaries, however, including its long-distance provider AT&T Long Lines, Western Electric and Bell Labs.\(^{37}\) The divested companies, called the Baby Bells or Regional Bell Operating Companies (RBOCs), were restricted from three lines of business: (1) long-distance telephone service, (2) manufacturing, and (3) information services.\(^{38}\)

With divestiture and the introduction of competition among long-distance carriers, the relationship between the local telephone companies and AT&T changed dramatically. Prior to divestiture, AT&T consisted of local telephone companies operating in state jurisdictions and Long Lines, which managed its long distance business. After divestiture, the Bell companies became independent entities. Moreover, with competition, AT&T became just another long distance provider, seeking to use Bell system and independent telephone company facilities to originate and terminate interstate toll calls. The former settlement process was no longer viable, and the Ozark Plan and SPF\(^{39}\) no longer reflected the FCC’s regulatory objectives. A new mechanism was necessary to allow local telephone companies to recover their costs of providing the local portion of interstate toll calls. The Commission also concluded that uniform services, cost recovery, and pricing for interstate access was in the public interest. Thus, the new mechanism had to address the disparities in the various access services provided by local telephone companies.

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36. 552 F. Supp. at 200-201.
38. AT&T Co., 552 F. Supp. at 186.
39. In 1983, the FCC amended the Ozark Plan, requiring that SPF be phased down to a uniform 25 percent for all companies. The phase-down began in 1986 and was completed in 1993.
companies to the long distance carriers. Of concern, however, was that the adoption of a mechanism that ended the historical method of access and local usage could also threaten the important goal of universal service.

The imposition of access charges was the methodology adopted by the FCC in 1983 to address these concerns. Under the new access charge rules, AT&T and its competitors were required to make competitively neutral payments to local telephone companies for the right to access their local networks. The Commission also indicated that the new rules were fashioned to bring telephone prices for local and long-distance services closer to their true economic cost by shifting part of the responsibility for covering the costs of providing interstate access away from long distance carriers and toward telephone customers or end-users. This was accomplished with the establishment of the subscriber line charge (SLC) (also known as end user common line charges) and the imposition of a flat-rate monthly charge assessed against individual customers.


41. See MTS & WATS Mkt. Structure, Phase I, 93 F.C.C.2d (1983), aff’d in relevant part sub nom. Nat’l Ass’n of Regulatory Utility Comm’rs, 737 F.2d at 1095. Also under the access charge regime, local exchange carriers are required to offer interstate access services at “averaged rates” throughout a study area. 47 C.F.R. §69.3(e)(7). A study area is typically the area within a single state served by a designated local operating company. The access rate averaging structure, which is also intended to support universal service goals, ensures that interstate access rates do not reflect the differences in cost of providing service in high-density and low-density service areas. Moreover, interstate access rates fail to reflect differences in the cost of the technology and in the distances, that is, the length of the transmission paths. Thus, rate averaging constitutes a form of subsidy: individual customers that impose higher than average costs on the carrier do not pay that full cost, while other customers pay more than their actual costs. The beneficiaries of rate averaging tend to be those customers in low-density locations or those located further from a telephone company end office. Thus, urban customers in highly dense areas, with short distances to end offices, are subsidizing or supporting the lower rates paid for by customers in rural or low-density areas. CCB BRIEFING PAPER, supra note 26, at 101.

42. The SLC has always been capped, due to affordability concerns. Initially this monthly charge was set at $1.00 for residential customers, with an increase to $2.00 to become effective June 1, 1986. Subsequently, the SLC was capped at $3.50 per line for residential and single line business customers and $6.00 per line for multi-line business customers. MTS and WATS Market Structure; Amendment of Part 69 of the Commission’s
Because this end-user charge substantially increased the price of flat-rate local telephone service, federal and state regulators became concerned that the goal of universal service was in jeopardy.\textsuperscript{44} These concerns resulted in the FCC’s implementation of several important new policy initiatives designed to promote and preserve telephone subscribership. The first of these efforts was initiated in 1985.\textsuperscript{45} The new initiatives were comprised of explicit support mechanisms—that

\textit{Rules and Establishment of a Joint Board, Recommended Decision and Order, 50 Fed. Reg. 964, ¶¶ 28-31.} The FCC has since amended the SLC caps for primary residential and single-line business customers beginning at $4.35 on July 1, 2000 and gradually increasing to $6.50 on July 1, 2003, provided that the LECs can justify any increase beyond $5.00. \textit{Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Low-Volume Long-Distance Users, Federal-State Joint Board on Universal Service, Sixth Report and Order in CC Docket Nos. 96-262 and 94-1, Report and Order in CC Docket No. 99-249, Eleventh Report and Order in CC Docket No. 96-45, 15 FCC Rcd 12962, 12974, ¶ 30 (2000) (CALLS Order), aff'd in part, rev'd in part, and remanded in part, Texas Office of Public Utility Counsel, 265 F.3d 313 (5th Cir. 2001) (TOPUC).} As a result, the CCL charges are at or approaching zero for many interexchange carriers. \textit{See CALLS Order, 15 F.C.C.R. at 13043-44, ¶ 196 (eliminating CCL charges and multi-line business PICCs for most customers served by price cap LECs in favor of adopting an explicit Interstate Access Support (IAS) mechanism). See also Multi-Association Group (MAG) Plan for Regulation of Interstate Services of Non-Price Cap Incumbent Local Exchange Carriers and Interexchange Carriers, Federal-State Joint Board on Universal Service, Access Charge Reform for Incumbent Local Exchange Carriers Subject to Rate-of-Return Regulation, Prescribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers, Second Report and Order and Further Notice of Rulemaking in CC Docket No. 00-256, Fifteenth Report and Order in CC Docket No. 96-45, and Report and Order, in CC Docket Nos. 98-77 and 98-166 (replacing the CCL charge with a new, explicit Interstate Common Line Support (ICLS) mechanism for rate-of-return carriers).}

43. \textit{See 47 C.F.R. § 69.152 (2004).} Recovery of interstate NTS costs is thus obtained from end users through the SLC. In the 1983 Access Charge Order, the Commission stated that its long-range goal was for LECs to recover a substantial charge of their NTS common line costs on a flat-rated basis from end users instead of from carriers. \textit{See 1983 Access Charge Order, 93 F.C.C.2d at 264-65.} However, the SLC has historically been insufficient to recover all of these costs, and, therefore, those costs not recovered through the SLC have been recovered through per-minute carrier common line (CCL) charges imposed on long-distance carriers. \textit{See CALLS, 15 F.C.C.R. 12969-70, ¶ 18.} The rules adopted in 1983, therefore, apportioned charges for common line costs between the monthly flat-rate SLC assessed on end users and a per-minute CCL charge assessed on long-distance carriers, which was ultimately recovered from customers through higher long distance rates. The current separation rules allocate 25 percent of the cost of the local loop to the interstate jurisdiction for recovery through interstate charges. \textit{See generally Smith v. Illinois Bell Tel. Co., 282 U.S. 133 (1930) (discussing the general process of separating these costs between the interstate and intrastate jurisdictions).}


is, subsidies targeted toward specific customers or categories of local exchange carriers. Support programs that gave direct assistance to telephone customers included Link-Up America, Lifeline Assistance, and American Telecommunications Relay Services (ATRS) programs. Programs that gave support directly to local exchange carriers included the Universal Service Fund, the dial equipment minutes weighting subsidy, and the Long Term Support program.

Under the Lifeline Assistance plan, elderly or low-income telephone subscribers receive a waiver of the FCC-imposed SLC, provided that the state regulatory authorities match the federal reduction in these households’ monthly telephone bills. The first such plan, adopted by the FCC in 1984, reduced eligible subscribers’ monthly bills by an amount equal to the subscriber line charge, with half the reduction coming from a 50 percent waiver of the SLC by the FCC, and the remaining portion from the participating states. The second Lifeline Assistance plan, adopted in 1985, expanded the program by waiving the entire SLC and providing that subscribers’ bills may be reduced by twice the SLC or more, if the state more than matches the federal waiver. The telephone bills of those customers eligible to participate in the second plan are reduced by as much as $7.00 per month. Since the inception of the Lifeline Assistance

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48. Commentators observe that implicit subsidies were also being provided to support universal service through interstate pricing practices such as the CCL charge and SLC as well as study area rate averaging. See CCB BRIEFING PAPER, supra note 26, at 3.
49. The SLC recently increased from $3.50 to a maximum of $4.35 per month on July 1, 2000. 47 C.F.R. § 54.403(a)(1) (2004).
50. Contributions provided by the states come from various sources, including state assistance from basic local telephone service, connection charges, or customer deposit requirements. MTS and WATS Market Structure; Amendment of Part 67 of the Commission’s Rules and Establishment of a Joint Board, Decision and Order, 51 Red. Reg. 1371, paras. 4-6 (1986).
51. Individual states establish means tests as to subscribers’ eligibility for a single telephone line in the principal residence, subject, however, to approval by the FCC. Id. Another plan under Lifeline assistance is a $1.75 per month reduction in the basic local rate, provided all relevant non-federal authorities have approved such a reduction. 47 C.F.R. § 54.403(a)(2). In addition, federal support is available to match half the non-federal support provided, up to a maximum of $1.75 in federal support to match $3.50 in non-federal support, assuming that the carrier has all necessary approvals to pass on the full amount of this total support in discounts to subscribers. 47 C.F.R. § 54.403(a)(3).
program, program recipients have received the benefit of more than $900 million through full or partial waivers of the SLC.52

In 1987, the FCC implemented the Link-Up America plan. Like the Lifeline Assistance plan, this program is targeted to subsidize households that are considered financially at risk of dropping off the public switched network. Whereas the Lifeline Assistance program provides for monthly subsidization of a customer’s bill, the Link-Up America plan provides a one-time subsidy to off-set the expenses associated with purchasing an initial subscription to the network. In proposing the latter program, the FCC reasoned that the initial installation charges imposed by local telephone companies could constitute a deterrent to subscription for certain low-income households. Consequently, the Commission adopted a two-pronged approach to ease the financial burden associated with installation charges. First, it proposed the payment of a subsidy of no more than one-half of the initial installation charge, to a maximum of $30.00 per household. Thereafter, federal assistance would be provided to defer the interest expenses associated with spreading the initial installation fees over a period of no more than one year.53 From its inception through 1995, the Link-Up program has provided $119.6 million in direct benefits to eligible recipients.54


53. MTS and WATS Market Structure; Amendment of Part 67 of the Commission's Rules and Establishment of a Joint Board, Report and Order, 2 F.C.C.R. 2953, 2955, ¶ 17 (1987) (1987 Report and Order). In 1989, the Link-Up program was amended by paying half of the first $60 of connection charges, and where a LEC has a deferred payment plan, Link Up will also pay the interest on any balance up to $200, for up to one year. MTS and WATS Market Structure, Link-Up America, and Amendment of Part 36 of the Commission's Rules and Establishment of a Joint Board, CC Docket No. 88-341, Decision and Order, 4 F.C.C.R. 3634 (1989) (Decision and Order). Both the Lifeline and Link-up America plans are financed from charges imposed on long distance carriers (based on their market shares of presubscribed customers), and, thus, imposed on long distance calling. Eriksson & Kaserman, 41 J. LAW & ECON. 477 at 481.

54. MONITORING REPORT, supra note 52, at 2-65. Congress gave no specific directions to the FCC as to the Lifeline and LinkUp programs in the 1996 Act. See 47 U.S.C. § 254(j)(2004). However, the Federal-State Joint Board created by the 1996 Act recommended expanding the regulations pertaining to Lifeline and Link-Up, and the May 1997 Universal Service Order adopted the recommendations. Federal-State Joint Board on Universal service, Report and Order, CC Docket No. 96-45, F.C.C. 97-157, 12 F.C.C.R. 8776, 8952-94, paras. 326-409 (1997). In June 2000, the Commission further expanded the Lifeline and Link-Up programs to address the particular needs of individuals living on Indian reservations. Eligible subscribers living on federally recognized Indian reservations qualify to receive federal Lifeline support if they certify that they receive benefits from one of the five national programs; or from one of four additional federal assistance programs: Bureau of Indian Affairs general assistance, Tribally Administered Temporary...
The FCC's Universal Service Fund (USF), created in 1984, was another effort aimed at promoting universal service. This program provides financial assistance, not to low-income customers, but to small local exchange carriers with 50,000 or fewer access lines and higher-than-average local loop costs. The FCC typically allocates the equipment costs associated with providing telephone service between the intrastate and interstate jurisdictions by using what is known as the relative dial equipment minutes of use ("DEM") percentage.
Under the USF program, the costs of these smaller companies are subsidized by allowing them to over-allocate (or “weight”) some of their switching costs to interstate jurisdictions. The USF is intended to promote growth in telephone subscribership by keeping local rates affordable throughout the country. The smaller companies, the Commission concluded, warranted high-cost assistance because of their inability to control factors such as population, density, and terrain. Absent such assistance, these high-cost companies would be prompted to raise local rates to excessive levels as they phased in the new 25 percent factor used for allocating loop costs to interstate operations. Since the inception of the USF, payments in excess of $8 billion have been transferred to these high-cost telephone companies.

Another FCC program, Long Term Support (“LTS”), provides a funding or payment-transfer mechanism that enables larger, lower-

the switching rate element of NECA’s traffic sensitive rate. Those carriers, however, that are not pool members recoup their costs through their own access rates. CCB BRIEFING PAPER, supra note 26, at 66 (citing National Exchange Carrier Association, Transmittal No. 663, Annual 1995 Access Tariff Filing vol. 2, at 15, exhibit 1 (Mar. 31, 1995)).


59. This was an issue because many of these companies, when using the old factors, were allocating as much as 80 percent of their local loop costs to interstate operations. Consequently, the FCC decided to phase in the USF program to coincide with that of the new 25 percent allocation factor. Financial support for the USF is provided by all interexchange carriers having at least .05 percent of the total common lines presubscribed by telephone customers to interexchange carriers nationwide. The financial obligation of each individual interexchange carrier is determined by its share of the presubscribed lines. Access Reform Task Force, Apr. 30, 1993, supra note 40, at 68-69. The USF is intended to primarily assist through financial support those telephone companies having 200,000 or fewer loops. These small telephone service areas are subsidized 65 percent of the cost per loop that is between 115 percent and 150 percent of the nationwide average and are subsidizes 75 percent of the cost per loop that exceeds 150 percent. It therefore has the effect, when combined with the 25-percent interstate separation factor, of allowing companies with the highest costs to recover up to 100 percent of their marginal loop costs from interstate customers. Id.

60. MONITORING REPORT, supra note 52, at 3-9, Table 3.2: Universal Service High Cost Loop Fund Payment History, 1984-1998. In 1995, NECA estimated the total yearly subsidy emanating from the DEM weighting factor to be approximately $311 million. CCB BRIEFING PAPER at 66 (citing National Exchange Carrier Association, Transmittal No. 663, Annual 1995 Access Tariff Filing vol. 2, at 15, exhibit 1 (Mar. 31, 1995)).
cost local exchange carriers (LECs) to provide financial support to smaller companies to help reduce the per-minute access fees they charge to interexchange carriers.\textsuperscript{61} By supporting local telephone companies with higher-than-average subscriber line costs through LEC-to-LEC transfer payments, the LTS program enables these companies to charge interexchange carriers only a national average interstate access rate while still allowing them to recover the full interstate portion of their subscriber line costs.\textsuperscript{62} The sum of the yearly transfer payments associated with the LTS program through 1996 was $2.7 million.\textsuperscript{63}

B. Other Government Agencies Promoting Universal Service

In addition to the regulatory programs and policies adopted by the FCC, the United States Congress has also authorized the investment of substantial sums from other government agencies to ensure the universality of telephone access. When reports from the 1940s indicated that telephone ownership in rural areas of the nation lagged behind the national average, Congress, in 1949, amended the Rural Electrification Act of 1936 (REA). The purpose of this amendment was to guarantee the following:

\ldots that adequate telephone service [would] be made generally available in rural areas through the improvement and expansion of existing telephone facilities and the construction and operation of such additional facilities as are required to assure the availability of adequate telephone service to the widest practicable number of rural users of such service.\textsuperscript{64}

\begin{footnotesize}
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\item[61.] CCB BRIEFING PAPER, supra note 26, at 71. For a brief description of the common carrier line (CCL) charge, see supra notes 42-43.
\item[62.] MTS and WATS Market Structure; Amendment of Part 67 of the Commission’s Rules and Establishment of a Joint Board, Report and Order, 2 F.C.C.R. 2953, ¶ 100. While the FCC allowed local telephone companies to withdraw from the NECA pool beginning in April 1989, it also required those companies with below average subscriber line costs that chose to exit the pool, generally the largest local exchange carriers to contribute enough so that the companies remaining in the pool would be able to charge the same industry average common carrier line rates they would have been charged if the pool were still mandatory for all local telephone companies. \textit{Id.} at ¶¶ 24-25, 27. Local exchange carriers that have withdrawn from the NECA loop pool, which presumably are lower cost carriers with access charges lower than the NECA average, fund the program. These carriers pay into NECA, however, an LTS subsidy in proportion to their relative share of common (subscriber) lines. \textit{Id.} at app. B ¶ 23 (providing text of 47 C.F.R. § 69.612(a)(2)). LTS subsidy payments are then recovered by these lower cost LECs through increased access charges to their own access customers. Brad E. Mutschelknaus, \textit{A Primer on Universal Service Funding and Reform}, 465 P.L.I. PAT. 109, 125-129 (Dec. 1996).
\item[63.] MONITORING REPORT, supra note 52, at 3-22.
\item[64.] 7 U.S.C. § 921 (1994). In 1936, Congress had enacted the Rural Electrification Act to empower the Rural Electrical Administration (“REA”) to “provide rural America
The amendment was part of the Pace Act, which renamed the REA the Rural Utilities Service (RUS), and expanded its province. The Pace Act authorized the new RUS administrator to make insured telephone loans to telephone service providers for the purpose of furnishing and improving telephone service in rural areas. The RUS has since implemented its statutory mandate by providing loans and grants to eligible recipients. To date, its expenditures have exceeded $27 billion dollars.

### III. Congressional Efforts to Ensure Universal Service

#### A. Prior to the Telecommunications Act of 1996

Though a mandate for universal service was not explicitly stated in the Communications Act of 1934, Congress has often expressed a commitment to the principle of universal access. Moreover with the

with low-cost electricity and telephone service by lending funds to rural electric and telephone systems directly at below market interest rates.” Rural Util. Serv. v. Cajun Elec. Power Co-op., Inc., 109 F.3d 248, 252 (5th Cir. 1997). The REA was later placed under the authority of the Secretary of Agriculture, pursuant to the 1939 REA Reorganization Plan, 15 U.S.C. § 903 (1994). The Rural Electrification Act was amended to encourage loans to support data communications capabilities such as the deployment of fiber optic lines. Rural Economic Development Act of 1989, H.R. 3581, 101st Cong., §§ 702, 722 (1989). The Rural Electrification Administration (“REA”) of the United States Department of Agriculture is still in operation, providing direct loans to small telephone companies that serve rural areas from the Rural Electrification and Telephone Revolving Fund, and the Rural Telephone Bank. See discussion *supra* at Part II.A. In fact, as one commentator noted, “neither do [the words “universal service”] appear in the thousands of pages of the Congressional Record during the period that Congress was preparing the legislation.” Milton L. Mueller, Jr., *Universal Service: Competition, Interconnection, and Monopoly in the Making of The American Telephone System* 6 (MIT Press 1997).
uncertainties associated with the divestiture of AT&T, Congressional interest in universal service has increased substantially.  

For more than a decade following the Bell system break-up, numerous bills were introduced in the House of Representatives and the Senate.  

Though most of the legislative proposals spoke to achieving universal telephone service for “all Americans regardless of geographic or economic conditions,” their primary focus was to assure high-quality, affordable telephone service to rural customers of small, high-cost telephone companies.

69. For example, on January 6, 1987, a bill was introduced to “amend the Communications Act of 1934 to promote fairness in telecommunications policy by providing for lifeline telephone service.” H.R. 291, 100th Cong. (1987). The purpose of this bill, referred to as the “Lifeline Service Act of 1987,” was “to provide for lifeline telephone service in order to assure that significant rate increases do not threaten universal service by forcing many Americans, especially the poor, the elderly, and the handicapped, to discontinue their telephone service.” Id. at § 2. The bill would have created a Lifeline Service Fund, which would have been administered much like the FCC’s Lifeline Assistance Plan. See id. at § 3. Another bill, introduced in the 100th Congress on Apr. 9, 1987, also mentioned the importance of universal service. This bill, named the “Telecommunications Equipment and Information Act of 1987,” sought to “permit the Bell operating companies to provide information services and to manufacture telecommunications equipment, subject to regulation by the Federal Communications Commission. H.R. 2030, 100th Cong. (1987). The bill stated that the “Congress finds that . . . the provision of universal telephone service at reasonable rates for all Americans is closely linked to the continued economic growth if the domestic telecommunications industry.” Id. at § 2. In a hearing concerning this bill before the Subcommittee on Monopolies and Commercial Law of the Committee on the Judiciary of the House of Representatives, the chairman of the committee and the subcommittee, Congressman Peter W. Rodino, stated that “our goal, I believe, ought to be the same as it always has been—maintaining a modern and efficient telecommunications system that provides a full range of services to all customers at competitive and affordable prices.” Competition in the Telecommunications Industry: Hearing on H.R. 2030 Before the Subcomm. On Monopolies and Commercial Law of the House Comm. on the Judiciary, 100th Cong. 2 (1987). Others giving statements in this hearing also expressed the importance of universal service. For example, Gene Kimmelman’s (the legislative Director of the Consumer Federation of America) written statement included these words: “Any further telecommunication policy changes must, first, and foremost, promote attainment of affordable phone service for all Americans.” Id. at 76. Kimmelman argued that H.R. 2030 “could jeopardize the affordability of basic phone services and the potential benefits of competition.” Id. at 88. Congressman Dan Glickman stated that “universal communications service is something that is part and parcel of our democratic system.” Id. at 106.


B. The Telecommunications Act of 1996

The Telecommunications Act of 1996 (“Act” or “Telecommunications Act”) was enacted on February 8, 1996. Despite its generally deregulatory and pro-competitive orientation, the Act amended the Communications Act of 1934 to include a new section, Section 254, entitled “Universal Service.” In the 1996 Act, Congress defined universal service as “an evolving level of telecommunications services that the Commission shall establish periodically . . . taking into account advances in telecommunications and information technologies and services.” In language granting affordable advance telecommunications services universally available to rural residents by the year 2000.” Id. at § 2. This was to be accomplished by providing grants for rural economic development and education partnerships and projects (Id. at §§ 111-12) and loans to businesses and entrepreneurs in rural areas. Id. at § 114. See also H.R. 1238, 101st Cong. at 1 (1989).


74. The language of the Act explains that its purpose is “to promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies.” Pub. L. No. 104-104, 110 Stat. 56 (1996).

75. To be codified at 47 U.S.C. § 254. The Committee report accompanying the draft bill explained that the purpose of the new section was:

“... to clearly articulate the policy of Congress that universal service is a cornerstone of the Nation’s communications system. This new section is intended to make explicit the current implicit authority of the FCC and the States to require common carriers to provide universal service.”


76. 47 U.S.C. § 254 (c)(1) (Supp. III 1997). The Act also provides authority to the states to determine intrastate universal service. It prohibits, however, states from instituting policies inconsistent with the FCC’s rules to preserve universal service. Additionally it requires every carrier that provides intrastate services to contribute to the universal service mechanisms adopted by the individual states. Furthermore, it requires
broad legislative power, the 1996 Act directs a Federal-State Joint Board (hereafter “the Joint Board”) \(^77\) and the Commission to continually revise and update the definition of universal service and thus identify those services to be sustained by the universal support mechanisms.\(^78\) To accomplish this, the Act requires the Commission to consider the extent to which such services are “essential to education, public health and safety,” “have . . . been subscribed to by a substantial majority of residential consumers,” and “are consistent with the public interest, convenience and necessity.”\(^79\)

that if a state adopts regulations to provide additional definitions of universal services that the state adopt additional mechanisms to support universal services that are specific, predictable, and sufficient, and do not burden federal mechanisms. \(\textit{Id.} \S 254(f).\)

\(^77\). Section 254 requires that within 30 days of enactment of the Act, the Commission shall “institute and refer to a Federal-State Joint Board under section 410(c) a proceeding to recommend changes to any of its regulations in order to implement sections 214(e) and \[Section 254\], including the definition of the services that are supported by Federal universal service support mechanisms and a specific timetable for completion of such recommendations.” \(\textit{Id.} \S 254 (a)(1).\) The statute further provides that the Joint Board be involved in every phase of implementing the universal service provisions. \(\textit{Id.}\) The Joint Board established consisted of eight members: Three FCC Commissioners, four State Commissioners nominated by the National Association of Regulatory Commissioners (NARUC), and one state-appointed utility consumer advocate nominated by the National Association of State Utility Consumer Advocates. Eli Noam, 97 \textit{COLUM. L. REV.} at 962 (citing FCC’s Federal-State Joint Board Meets for First Time, Newsbytes, Apr. 16, 1996 available at LEXIS, News Library, CURNWS File).

\(^78\). \(\textit{Id.}\) The section provides:

\(\text{(c) DEFINITION. - - }\)

\(\text{(1) IN GENERAL.—Universal service is an evolving level of telecommunications services that the Commission shall establish periodically under this section, taking into account advances in telecommunications and information technologies and services. The Joint Board in recommending, and the Commission in establishing, the definition of the services that are supported by federal universal service support mechanisms shall consider the extent to which such telecommunications services—}\)

\(\text{(A) are essential to education, public health, or public safety;}\)

\(\text{(B) have, through the operation of market choices by customers, been subscribed to by a substantial majority of residential customers;}\)

\(\text{(C) are being deployed in public telecommunications networks by telecommunications carriers; and}\)

\(\text{(D) are consistent with the public interest, convenience, and necessity.}\)

\(\text{(2) ALTERATIONS AND MODIFICATIONS.—The Joint Board may, from time to time, recommend to the Commission modifications in the definition of the services that are supported by Federal Universal service support mechanisms.}\)

\(\text{(3) SPECIAL SERVICES.—In addition to the services included in the definition of Universal service under paragraph (1), the Commission may designate additional services for such support mechanisms for schools, libraries, and health care providers for the purposes of subsection (h). ”.}\)

\(^79\). \(\textit{Id.}\)
With regard to the preservation, advancement and development of this new universal service policy, the Act identifies several principles for consideration by the Joint Board and the Commission. Of particular importance is the requirement that low-income consumers have access to advanced telecommunications and information services at reasonable and affordable rates.\textsuperscript{80} The Act also calls for the FCC to designate additional services to be supported by the universal service mechanisms for schools, libraries and health care facilities.\textsuperscript{81} Moreover, the Joint Board and the Commission are given the added latitude to establish additional principles when those principles are determined to be necessary and appropriate for the protection of the public interest.\textsuperscript{82} Thus, with these mandates,


(b) UNIVERSAL SERVICE PRINCIPLES.—The Joint Board and the Commission shall base policies for the preservation and advancement of universal service on the following principles:

(1) QUALITY AND RATES.—Quality services should be available at just, reasonable, and affordable rates.

(2) ACCESS TO ADVANCED SERVICES.—Access to advanced telecommunications and information services should be provided in all regions of the Nation.

(3) ACCESS IN RURAL AND HIGH COST AREAS.—Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.

(4) EQUITABLE AND NONDISCRIMINATORY CONTRIBUTIONS.—All providers of telecommunications services should make an equitable and nondiscriminatory contribution to the preservation and advancement of universal service.

(5) SPECIFIC AND PREDICTABLE SUPPORT MECHANISMS.—There should be specific, predictable and sufficient Federal and State mechanisms to preserve and advance universal service.

(6) ACCESS TO ADVANCED TELECOMMUNICATIONS SERVICES FOR SCHOOLS, HEALTH CARE, AND LIBRARIES.—Elementary and secondary schools and classrooms, health care providers, and libraries should have access to advanced telecommunications services as described in subsection (h).

(7) ADDITIONAL PRINCIPLES.—Such other principles as the Joint Board and the Commission determine are necessary and appropriate for the protection of the public interest, convenience, and necessity and are consistent with this Act.”

81. Id. § 254 (c)(3).

82. Id. The Act also provides that schools, libraries, and health care facilities have access to advanced telecommunications services at a rate lower than what would be charged to other parties for similar services. Id. § 254(h)(1)(B). For a further discussion,
Congress clearly has reaffirmed and codified the nation's commitment to universal service.83

IV. The FCC's Interpretation of the Universal Service Provisions

A. Services Covered and Excluded

Section 254(c)(1) of the 1996 Act specifically acknowledges that “[u]niversal service is an evolving level of telecommunications services.” Indeed, the statutory language instructs the Commission to obtain recommendations from the Joint Board before adopting any new definition of universal service. It also requires the FCC to periodically revise the definition to take into account advances in telecommunications and information technologies and services.84 On March 8, 1996, when the Commission established the Joint Board it also issued a Notice of Proposed Rulemaking that invited comments and recommendations on how to define those services appropriate to receive support under the statute.85 More than one hundred parties submitted public comments and reply comments.86

On November 8, 1996, the Joint Board issued its recommendation to the Commission, proposing a definition that fundamentally mirrored the existing basic telephone service.87 In an

see Allen S. Hammond, Universal Access To Infrastructure and Information, 45 DePaul L. Rev. 1067 (Summer 1996).

83. The Committee Report accompanying the draft bill explained the goal of the new universal section: “...to clearly articulate the policy of Congress that universal service is a cornerstone of the Nation’s communications system. This new section is intended to make explicit the current implicit authority of the FCC and the States to require common carriers to provide universal service.” Senate Committee on Commerce, Science, and Transportation. Committee Report on the Telecommunications Competition and Deregulation Act of 1995. Senator Larry Pressler, Chairman, to June E. O'Neill, Director, Congressional Budget Office, Mar. 28, 1995. See also Eli Noam, 97 Colum. L. Rev. 955, at 956 (“The 1996 Telecommunications Act ... is a solid commitment to redistributive universal service to rural areas, the poor, the middle class, and the educational system.”).


87. Universal Service Recommended Decision, 12 FCC Red. 87 (1996), amended and adopted by Report and Order (1997). In effect, the Joint Board recommended single-party, touch-tone, and voice grade telephone service that had access to emergency numbers and operators. Id. The Joint Board also augmented the principles enumerated in the Act in that it recommended basing the policies by which universal service should
Order, the FCC adopted the Joint Board’s recommendation on May 7, 1997, and announced that supportable services included the following:

[Voice grade access to the public switched network, with the ability to place and receive calls; Dual Tone Multifrequency (DTMF) signaling or its functional equivalent; single-party service; access to emergency services, including in some instances, access to 911 and enhanced 911 (E911) services; access to operator services; access to interexchange services; access to directory assistance; and toll limitation services for qualifying low-income consumers.]

The Order further provided that the Joint Board would review this list of covered services on or before January 1, 2001. Section 254’s requirement that the definition of universal service be periodically revised is coupled with the requirement that the FCC review the progress of the implementation of universal service within five years of the policy’s implementation. Consequently, the FCC issued a series of orders detailing their plans to implement this mission, up to and including the most recent recommended decision, adopted July 9, 2002, which effectively affirmed the universal service status quo, and limited the list of covered services to those included in the Commission’s original Report and Order. However, although the original FCC Order underwent a number of different iterations, most of the revised versions did not change the type of services covered.

operate on the principle of competitive neutrality. The essence of this principle, envisioned by the Joint Board, is that universal service support should not be biased toward any “recipient and contributor to the universal service support mechanism,” nor “toward any particular technologies.” Additionally, the Joint Board highlighted the fact that no one principle should outweigh the primary goal of providing all residents with quality telecommunications services at reasonable rates. 12 F.C.C.R. 87 (adopted Nov. 7, 1996).

89. See id. at 22.
90. See id.
The greatest potential for comprehensive change in listed services was unquestionably embodied in the Joint Board’s September 5, 2001, Notice and Request for Comment (Notice), which solicited input on the definition of universal service. Specifically, the Joint Board invited comment on the following:

“. . . what services, if any, should be added to or removed from the list of core services eligible for federal universal service support and how those core services should be defined . . . considering the extent to which the services in question (1) “are essential to education, public health, or public safety”; (2) “have, through the operation of market choices by customers, been subscribed to by a substantial majority of residential customers”; (3) “are being deployed in public telecommunications networks by telecommunications carriers”; and (4) “are consistent with the public interest, convenience, and necessity.”

The Notice stipulated that commenters should “estimate the annual cost of any proposed modifications in the list of core services, and explain the derivation of their estimates.” It also requested that the availability of functional substitutes for a service and the extent to which consumers may have access to the service in locales other than their own residences be addressed. The Notice also invited commenters to provide a practical plan for updating the official definition of universal service, and required that the plan be consistent with the principles originally described by the legislature.

Subsequently, the Joint Board issued a Recommended Decision, concluding that “no new service satisfies the statutory criteria contained in Section 254(c) of the Communications Act . . . and . . . the public interest would not be served by expanding the scope of

remanded, Qwest Corp. v. F.C.C., 258 F.3d 1191 (10th Cir. 2001) (describing non-rural high-cost support mechanisms, and defining non-rural carriers are those that do not meet a revised statutory definition of a rural telephone company); Federal-State Joint Board on Universal Service, CC Docket No. 96-45, Recommended Decision (Oct. 16, 2002) (modifying non-rural high-cost support mechanism described in Ninth Report and Order by including additional incentives for states to ensure reasonable comparability). The most significant change in the definition of Universal Service came about in the Board’s Order to include lifeline and linkup services as required components of any provider receiving universal service support. See Federal-State Joint Board on Universal Service, 15 F.C.C.R. 10095. Most recently, the Commission declined to include equal access in the list of supported services, explaining that “including equal access to interexchange service among the services supported by universal service mechanisms would require a Commercial Mobile Radio Service (CMRS) provider to provide equal access in order to receive universal service support.” See Federal-State Joint Board on Universal Service, 17 F.C.C.R. 14,095, No. 67 (F.C.C. July 10, 2002).

94. See FCC Notice and Request for Comment, 66 FR 46461 (Sep. 5, 2002).
95. See id.
96. See id.
universal service at this time.” It thereby declined to expand the definition of universal service to include those services identified in the Notice and Comment—namely, advanced services, soft dial tone, intrastate or interstate toll, expanded area service, and prepaid calling plans. The Joint Board further noted that it was unwilling to include services proposed by parties responding to the Notice and Comment, but not included in the original request.

By way of justification, the Recommended Decision cited the failure of the proposed services to fall within the statutory criteria described in Section 254(c). It further noted the negative impact that inclusion of new services would have on competition and on the principle of competitive neutrality embodied in Section 254(e). It also noted the extent to which states already compel the provision of many of the services being proposed.

The Joint Board subsequently rejected a number of services recommended for inclusion on the grounds that they failed to qualify as “telecommunications services,” as services “essential” for consumers, or as services “subscribed to by a substantial majority of

98. See 17 F.C.C.R. at 14095-14111.
99. The FCC did not determine whether equal access to interexchange service should be included within the definition of universal service. Such a proposal, the FCC indicated, was outside the scope of the Notice and Comment even though it was advanced by some of the parties submitting comments. The FCC did, however, include a discussion as to the possible consequences of adopting such a proposal. See 17 F.C.C.R. at 14121-14128. The Commission also refused to include unlimited local usage, payphone lines, Braille TTY, Two Line Voice Carry Over (“2LVCO”), transport costs, rural wireless ETC category service, technical and service quality standards, and N11 codes. See 17 F.C.C.R. at 14111-14122. Subsequently, the FCC issued a Noticed of Proposed Rulemaking inviting comment on the subject. See F.C.C., Notice of Proposed Rule: Federal-State Joint Board on Universal Service, 60 F.R. 12020 (Mar. 13, 2003). The comment period closed in April, but no rule has since issued on the matter.
101. See, e.g., 17 F.C.C.R. at 14116-14117 (“many states have already developed equipment distribution programs that provide[customer premise equipment], such as Braille TTYs, to qualifying individuals. . .”); 17 F.C.C.R. at 14119-20 (imposing federal technical and service quality standards via universal service “would largely duplicate state efforts.”).
102. See, e.g., 17 F.C.C.R. at 14116-7 (Braille TTY device does not qualify as “telecommunications service,” as it falls under the rubric of customer premise equipment).
103. See, e.g., 17 F.C.C.R. at 14105 (“a network transmission component of Internet access . . . is not ‘essential to education, public health, or public safety’ [as] no community or public service agencies are available exclusively over the web.”). However, the Decision did note that “we recognize that Internet access is becoming increasingly important to consumers’ daily lives,” and promised to continue to monitor Internet development. Id. at 14105-6.
residential customers. Moreover, the Joint Board claimed that the cost to consumers of including certain services would be too egregious, and that including more services would stifle competition by unduly burdening the providers of universal service, known as “eligible telecommunications carriers” ("ETCs"), with the expense of new services. Lastly, the Joint Board declined requests to remove certain services from universal service support, declaring that circumstances had not “changed significantly with regard to the core services since the Commission adopted the original definition.” The Recommended Decision concluded that the current list of included services comports with the 1996 Act’s goal of competition and the principle of competitive neutrality.

In the end, the Recommended Decision preserved the status quo. With the exception of a new commitment to pursue the question of equal access, the Joint Board, apparently relying on market forces to encourage the inclusion of new services among providers, rejected all proposed changes to the list of included services. The

104. Id. at 14109 (soft dial tone or warm line services might not qualify as “telecommunication services subscribed to by residential consumers.”).
106. See, e.g., 17 F.C.C.R. at 14104 (modifying voice grade access to bandwidth to 300 to 3,500 Hz would not serve the public interest as “the expanded bandwidth requirement would significantly increase the size of the universal service fund, which would increase the cost of the core services to all consumers.”).
107. See 17 F.C.C.R. at 14098. Section 254(e) limits the receipt of support from the Federal Universal Service Fund to ETSs, and to qualify each carrier must “offer the services that are supported for by the Federal universal services support mechanisms under Section 254(c).” 47 U.S.C. § 214(e)(1)(A) (2002).

Consequently, if the FCC had chosen to expand the definition of universal service, all current and future ETCs must offer all of the new services to their customers in order to retain their funding. On multiple occasions, the Recommended Decision claimed that the inclusion of a new service drove ETCs out of the market, thereby reducing competition, either because providing that service was impossible (i.e., the current state of technology does not allow wireless carriers to duplicate all the capabilities of wireline carriers), or because the cost of doing so was impractical for some providers. See, e.g., 17 F.C.C.R. at 14111 (including prepaid calling plans would ‘render carriers that utilize wireline technologies ineligible for federal support,” and would therefore violate the public interest in promoting competitive neutrality); Id. at 14108-9 (as wireless providers are incapable of providing continuous connection to public safety answering points, requiring that soft dial tone/warm line service be included would be inconsistent with the public interests given the “negative impact on competition”).
108. Id. at 14128.
109. Id. at 14128.
110. See id. at 14101.
Recommended Decision thus appears to have resisted the unmistakable efforts on the part of Congress to reduce the breadth of the so-called digital divide.

V. Congressional Efforts To Lessen the Digital Divide

A. Unsuccessful But Important Legislative Efforts

Though much of the legislative activity following the decade after the break-up of the Bell system spoke to the goal of achieving universal telephone service,\(^{111}\) numerous legislative initiatives embraced the notion of access to advanced telecommunication services. On October 8, 1991, H.R. 3515, referred to as the “Telecommunications Act of 1991,” was introduced. This legislative initiative focused on the widespread provisioning of new telecommunications technologies.\(^{112}\) During Congressional hearings on the bill, Congressman Edward J. Markey, Chairman of the Subcommittee on Telecommunications and Finance, offered the following remarks:

This committee’s job, in essence, is to lay this country’s foundation for the Information Age. Easy access to information will be vital for our country’s future. It could be the Great Equalizer in education for our country’s children, empowering blue collar children or minorities with the same access to information enjoyed by other students coming from more affluent households. A new age will arrive when the children of Harlem have access to the same information as the children of Harvard. Moreover, the economic benefits to our Nation’s business through greater efficiency will help to ensure a vibrant domestic economy and competitive edge overseas.\(^{113}\)

The notion of expanding the concept of universal service to include advanced telecommunications services was again introduced on November 22, 1993 with H.R. 3636.\(^{114}\) The discussion draft of this

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111. *See discussion infra* at note 120.
113. *Modified Final Judgment: Hearings on H.R. 1523, H.R. 1527, and H.R. 3515 Before the Subcomm. on Telecommunications and Finance of the House Comm. on Energy and Commerce*, 102d Cong. at 523 (1991). Others commented on the importance of universal service in the course of the proceedings. For example, Senator Larry Pressler stated, “Without universal service as a fundamental pillar of our national telecommunications policy, we in rural parts of the country will be left far behind in the advancing information age.” *Id.* at 370.
114. H.R. 3636, 103d Cong. 101 (1993). Initially referred to as the “National Communications Competition and Information Infrastructure Act of 1993,” but later called the “National Communications Competition and Information Infrastructure Act of
bill, which was circulated on July 12, more explicitly addressed universal service goals. The draft sought to add a section which would recast the nation’s telecommunications policy to ensure that its objectives “take into account the need to continue to serve the national objective of universal availability of telecommunications services at affordable prices by maximizing use of existing facilities where technically and economically feasible.”

It also sought to “recommend changes in the definition of universal service to include such advanced capabilities for telecommunications as are found to be in the public interest.”

Earlier that same year, on June 9, 1993, S. 1086 was introduced in the Senate. This bill, referred to as the Telecommunications Infrastructure Act of 1993, sought to “foster the further development of the Nation’s telecommunications infrastructure through the enhancement of competition.” One of the bill’s stated objectives was to ensure universal service. To achieve this goal, the bill espoused substantial telecommunications infrastructure development to bring advanced telecommunications services to disadvantaged, residential, and low-income users. It further called for state and federal regulators to “have as their goal directly assisting individuals

1994.” The bill sought to establish a Federal-State Joint Board to ensure that universal service was preserved and included access to advanced telecommunications services, by including the following provisions:

(ii) Such plan should define the nature and extent of the services encompassed within carriers, universal service obligations and should seek to promote access to advanced telecommunications services for all Americans by including advanced telecommunications services in the definition of universal service, while maintaining affordable rates.

Id. at § 102(c)(6)(B).


116. Id. at 3-4. The Energy and Commerce Committee Report (“Committee Report”) on H.R. 3636 provided that “the long-standing policy of universal service not only endures but is updated to evolve with the rapid changed in the communications industry.” H.R. REP. NO. 103-560 at 28 (1994). The Committee Report also acknowledged that as competition evolved and technological innovation increased the current subsidy and contribution mechanisms might “become totally unmanageable.” Id. at 35. Thus, the Committee Report explained, the support mechanisms needed to be reexamined, taking into “consideration the effect of the proliferation of digital technologies and the creation of the so-called information superhighway on the definition of universal service.” Id.


118. Id. at § 3.

119. Id. at § 2.
or entities that cannot afford the cost of their telecommunications service or equipment.”

Another Senate bill, S. 2195, was introduced on June 15, 1994. Referred to as the National Public Telecommunications Infrastructure Act of 1994, it sought to “direct the Federal Communications Commission to require the reservation, for public uses, of capacity on telecommunications networks.”

As stated in the text of this proposed legislation: “[t]he Government has a compelling interest in ensuring that all citizens of the United States have access to noncommercial, governmental, educational, informational, cultural, civic, and charitable services through all appropriate telecommunications networks.” In the hearings on S. 2195, one of the witnesses expressed concern that “to date the focus on universal service has been limited to wiring and providing instruments for all homes.” The witness continued: “While the ability to access the information highway is essential to the public interest, this ability alone does not make communications universally available in any real

120. Id. In the hearings on S. 1086 before the Subcommittee on Communications of the Committee on Commerce, Science, and Transportation, the Chairman of the Subcommittee, Senator Daniel K. Inouye stated, “[a]lthough there are a number of disagreements about the issues involved in this bill, there is one issue on which there is no disagreement: Everyone agrees that this Nation needs to promote the growth and development of an enhanced high quality, universally available telecommunications network.” S. 1086, The Telecommunications Infrastructure Act of 1993: Hearings Before the Subcomm. on Communications of the Senate Comm. on Commerce, Science, and Transportation, 103d Cong. at 1 (Jul. 14, 1993). Senator Inouye continued on:

Rural residents believe that an enhanced network will give them access to more advanced health care, and provide greater opportunity for economic growth. Inner city residents want access to a diversity of information at low cost. Handicapped persons believe that telecommunications can compensate for their disabilities ... In short, virtually every consumer group, every participant in the telecommunications industry ... is demanding that Congress pay greater attention to the potential economic and social benefits of advanced telecommunications services.

Id. See also S. 1822, 103d Cong. at § 2 (1994) (emphasizing the importance of universal service and promoting the development and widespread availability of new technologies, to maximize the contribution of communications and information technologies and services to economic welfare and quality of life and to promote democracy).

121. S. 2195, 103d Cong.(1994). The legislative day was June 7, 1994, however.

122. Id.

123. Id. at 2.

sence. The concept of universal service needs to incorporate some level of free training, access to equipment and technical support.\textsuperscript{125} Though none of the preceding bills were enacted into law, they were the obvious precursors to the 1996 Act. Moreover, other legislative proposals addressing the problem of the digital divide in the United States have been enacted by Congress and thus have provided meaningful guidance to the FCC on implementing policy that can help lessen the technology disparity evident in our society.

B. Successful Legislative Efforts and Resulting Government Agency Actions

1. The Rural Utilities Service

As recently as 1990, Congress reaffirmed an ongoing commitment to advancing technology, when it enacted the Rural Telecommunications Improvements Act of 1990. This legislation expanded the purview of the Rural Utilities Service ("RUS") to include "modern telecommunications technology and services"\textsuperscript{126} that incorporate "data" as well as "voice" transmissions.\textsuperscript{127} Telephone loans are still a priority, and the RUS is authorized to make insured telephone loans to telephone service providers for the purpose of furnishing and improving telephone service in rural areas.\textsuperscript{128} However, the RUS has also been empowered to expand its program to include loans and grants for the kind of communications equipment that can serve the needs of emerging technology, including broadband service, Internet service, and Internet access equipment. The RUS also administers the Rural Telephone Bank ("RTB").\textsuperscript{129}

\textsuperscript{125} Id.

\textsuperscript{126} See Pub. L. 101-624 § 2352, 104 Stat. 4038 (Nov. 28, 1990). 7 U.S.C. § 901 (1994). It is important to note that when considering the 1949 Pace Act amendments, the Senate had originally intended that the RUS use a limited definition of telephone service: "voice communication through the use of electricity and wire connections between the transmitting and receiving apparatus is the principle intended use thereof." S. REP. NO. 81-1071 (1949), reprinted in 1949 U.S.C.C.A.N. 2330, 2332. However, the bill was amended in conference committee to include "radio telephone communications," in addition to telephonic transmission by more "conventional wire circuits." Id. at 2337-38. This change was not surprising given that the RUS's telephone programs were established in recognition of "fundamental and far-reaching technological and economic advances" that had largely left behind the rural farmer, who was thereby deprived of "an important asset in agricultural economy," an asset necessary for the farm as "a place of business." Id. at 2333.

\textsuperscript{127} See 7 U.S.C. § 924(a) (1994).

\textsuperscript{128} See 7 C.F.R. § 1786.25 (2001).

which established a supplemental credit mechanism that borrowers may draw upon to fulfill their private capital requirements. The RTB alone is responsible for approximately $6.8 billion in cumulative telephone loans to commercial, cooperative and public body borrowers.

Beginning in 1990, several new programs were instituted to address emerging telecommunications technology issues. First, pursuant to the 1990 amendments to the Rural Electrification Act, the RUS created the Distance Learning and Telemedicine (“DLT”) program, which issues grants and loans for the purpose of developing telecommunications technologies that will enhance rural medical and distance learning services. The RUS regulations provide that DLT funds may be used to finance the purchase or improvement of computer and telecommunications equipment, as well as infrastructure enhancements. In establishing the DLT program, Congress emphasized that this effort was intended “to make affordable advanced telecommunications available to rural residents” and to “provide access to advanced telecommunications services and computer networks.” For fiscal year 2002, the DLT program awarded over $300 million dollars in grants and loans.

The Local Dial-Up Internet Grant Program was also created with the goal of bringing advanced telecommunications to rural areas. This program provides grants and loans for the acquisition, construction and installation of Internet technology equipment in rural areas. In 2001, the Dial-Up program was authorized more than $2 million dollars to accomplish its mandate. This appropriation was overshadowed by the $80 million that was allocated to the RUS Broadband Pilot Loan Program during the

132. See 7 C.F.R § 1703.100 (2004).
133. Id. at §§ 1703.121 (approved purposes for grants), 1703.102 (defining “eligible equipment” that may be purchased).
137. See East-West Gateway Coordinating Council, Weekly News Bulletin From the Local Government & Member Services Program Vol. 4 No. 35 (Sep. 28, 2001) at 12.
following year. The latter program was designed to finance the construction of “facilities and systems” to bring broadband technology to rural consumers.

Expenditures for rural telecommunications programs have increased substantially. As of 1998, RUS programs had approved financing and loans exceeding $12.6 billion. The steady escalation of a national commitment to advanced telecommunications services in rural areas is evinced in the Office of Budget and Management projections for RUS expenditures for fiscal year 2000. The expenditures included $495 million in direct loans to companies providing telecommunications services to rural communities as well as $27 million in grants and $400 million in loans for distance learning, telemedicine, and broadband technology. The expansion of RUS programs and the increased investment of RUS funds to help develop advanced telecommunications services suggests the emergence of a trend towards recognizing that communications in the 21st century will require more than just a telephone dial tone.

2. National Telecommunications and Information Administration

The National Telecommunications and Information Administration (NTIA), an agency of the U.S. Department of Commerce, is responsible for guiding domestic and international telecommunications and information technology policy. Established pursuant to section 392 of the Communications Act of 1934, the NTIA manages federal use of radio frequencies, advises the President on telecommunications policy, and administers several grant programs designed to spur innovation, encourage competition, and

141. Office of Budget and Management, Rural Utilities Service Expanding Telecommunications Funding, available at http://www.whitehouse.gov/omb/budget/fy2000/bud05.html (last updated Feb. 1, 2002); see also Dep’t of Agriculture, Department of Agriculture Budget 156, 160, 162 (2002). This figure includes funds budgeted for loan financing, loan costs, and administrative costs for rural electrification telecommunication loans, rural telephone bank loans, distance learning telemedicine and broadband communication loan programs.
expand the range of technology choices available to consumers.\textsuperscript{143} Two of these grant programs, the Technologies Opportunity Program (TOP) and the Public Telecommunications Facilities Program (PTFP), have together provided more than $800 million in grants for technology equipment and information to recipients.\textsuperscript{144}

During FY 2001, the Technology Opportunities Program ("TOP") expended over $42.8 million in grants to assist nonprofit organizations purchase equipment for software, information and communication services, and staff training.\textsuperscript{145} This amount was doubled with local matching funds.\textsuperscript{146} In fact, between 1994 and 2001, Congress appropriated more than $191 million to fund NTIA’s telecommunications enhancement programs.\textsuperscript{147}


\textsuperscript{144} Id.


\textsuperscript{146} Id. TOP funds can be used to cover as much as 75 percent of total project costs. Misener & Wiley, supra note 143, at 228. Grantees include government organizations as well as private groups like the America Connects Consortium, working to connect local community centers to the Internet to “eliminate the digital divide.” Nat’l Telecommms. & Info. Admin., Dep’t of Commerce, TOP’s News From the Field, available at http://www.ntia.doc.gov/top/publicationmedia/newsltr/archive.htm (last visited Feb. 29, 2004). TOP expenditures were almost matched by its sister program, the Public Telecommunications Facilities Program ("PTFP"), which provides grants for non-commercial education technology equipment.

\textsuperscript{147} See generally 108 Stat.1724 (2001). The TOP’s overall expenditures have been almost matched by those of its sister program, the Public Telecommunications Facilities Program ("PTFP"), which provides grants to non-profit organizations for the purchase of equipment that disseminates noncommercial educational and cultural information through various telecommunications media. Dep’t of Commerce, \textit{The Telecommunications and Information Infrastructure Assistance Program}, available at http://www.ntia.doc.gov/otiathome/ (last visited Jan. 21, 2002). From 1967 to 2002, Congress appropriated $670 million to the PTFP program, enabling it to become a major, and crucial, source of funding for the public television industry. Ass’n of Public Television Stations, Legislation & Policy: Public Telecommunications Facilities Program (PTFP), at http://www.aptv.org/html/legislative/legislativeptfp.html; see generally 47 U.S.C. § 309-393, 397-399b (1994); 15 C.F.R. 2301.6 (2001). In fiscal year 2001 alone, the program awarded 105 grants, totaling $42 million, to non-profit organizations located in 43 states. Dep’t of Commerce, Fact Sheet: FY 2001 Public Telecomm. Facilities Program Grants, available at http://www.ntia.doc.gov/ntiahome/press/2001/ptfpfacts_100101.htm (last visited Jan. 21, 2002). Grants are provided in the form of matching funds for the purchase of equipment that disseminates non-commercial educational and cultural information through various telecommunications media. The PTFP uses several criteria to determine grant awards, including whether the product has the potential to: (1) expand telecommunications access to underserved areas; (2) replace obsolete or worn out equipment at “essential stations”; (3) plan and construct
3. **U.S. Department of Education Programs**

The U.S. Department of Education (DOE) has invested more than $750 million annually in recent years to develop Internet and computer resources for students.\(^{148}\) Title I and Title II of the Elementary and Secondary Education Act of 1965 authorized the DOE to create grant programs aimed to provide equipment and training for teachers and students in public schools and to help reduce their technology service costs.\(^{149}\) The Star Schools Program Assistance Act further mandated the awarding of DOE grants to schools and telecommunications partnerships to help them provide non-traditional and disadvantaged children with computer-assisted instruction in mathematics, science and language.\(^{150}\) Between fiscal years 2000 and 2003, the Star Schools program received appropriations of almost $165 million.\(^{151}\) Another DOE grant initiative, the Technology Innovation Challenge (TIC) program, provides five-year awards to consortia that seek to improve and expand technology in poverty-stricken areas.\(^{152}\) TIC awarded its first grants in 1995, and since 2000, it has announced funding for awards of more than $365 million.\(^{153}\) A similar program, the Technology Literacy Challenge Fund (TLCF), provides grants to school districts to help them integrate technology into their curricula.\(^{154}\) It began

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\(^{150}\) 20 U.S.C. § 7255 et seq. (1994). Star Schools grants may be used, inter alia, to “develop[], construct[], acqui[re], maint[ain] and operat[e]” telecommunications equipment, as well as to provide educational programming and technical assistance. Id. at § 7255b(a)(1).


awarding grants in 1997 and as of Fiscal Year 2001 had provided states with funding totaling nearly $1.5 billion.155

An even more expansive program, the DOE’s Computer Technology Centers (CTC) initiative provides grants to state and local education agencies, as well as colleges to promote education technology in economically-distressed urban and rural areas.156

The most expansive of the DOE programs, however, is its Goals 2000 Project,157 launched in 1994, which provides grants to states to promote long-term educational improvement efforts through technology integration. Goals 2000 expended more than $2.6 billion between 1994 and 2000.158

Congress’s continuing dedication to technology development in schools is also demonstrated by the recent passage of the No Child Left Behind Act, which was signed into law in 2001.159 Part D of this legislation, the “Enhancing Education Through the Use of Technology” section, addresses the goal of closing the achievement gap between economically disparate schools at the elementary and secondary education levels, and in doing so provides increased funding for technology within the nation’s public schools.160 The No Child Left Behind Act further enacts the creation of technology training programs for teachers and students, increases funding for school computer equipment and funding for equipment and services to connect classrooms to the Internet.161

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160. Id.
161. Id. at 1677, 1685-89, 1881-87, 1923-1952.
VI. The Growing Divide and The Efforts Of The FCC

A. What is This Divide That Is Digital, Growing, and In Need of Closing?

In our increasingly digital world, information technology has become a prerequisite for economic survival. However, today’s digital environment has evolved to the point that a ‘digital divide’ between distinct groups of Americans is at risk of becoming a form of “information apartheid.” Though the traditional federal universal service programs provide a limited mechanism to subsidize low-income telephone access, no parallel program exists to ensure the same minimum access to information technologies. The resultant “digital divide” is defined by two realities: first, Americans are increasingly divided into groups—those with access to Internet technology those without—and second, access to that technology is increasingly becoming more important to economic and political well-being.


164. The Lifeline Assistance Program (“Lifeline”) and the Lifeline Connection Assistance Program (“Link-Up”) reduce federal line charges and connection charges for low-income consumers, as well as providing for free access to toll-limitation services.
The disparity of access to Internet and information technology has resulted in the exclusion of certain groups of Americans—based on income, by race, and geography—from the benefits of emerging technologies. Internet penetration is weakest for Hispanic and African American households, persons with incomes below $35,000 per year, and persons living in the nation’s central cities (i.e., inner-city areas).165 Most alarming is the growing difference between minority access to the Internet and Internet access in White households. Though access for both groups has increased, the increase for the White community has substantially outpaced growth in minority communities. A recent government report observed that between 1998 and 2000, the digital-penetration gap between White and African-American households widened by three percentage

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points.\textsuperscript{166} As of September 2001, White American households were still nearly a third more likely to have Internet access than were African-American households.\textsuperscript{167} The report also disclosed that more than 60 percent of all non-Internet users are African American.\textsuperscript{168} Even more disturbing, the largest groups of non-Internet use, as measured by income and geography, are families with incomes of less than $15,000 (75 percent) and incomes between $15,000 and $24,999 (66.6 percent), and those living in central city areas (50.9 percent).\textsuperscript{169}

\begin{figure}
\centering
\includegraphics[width=0.5\textwidth]{internet_access_by_ethnicity.png}
\caption{Rates of Internet Access by Ethnicity (from Table 1)}
\end{figure}

1. The Impact of the Digital Divide on Schools and Libraries

The latest DOE report on Internet access in our nation’s public schools reveals that schools characterized by high minority enrollment and/or high poverty levels are more likely to have (1) the fewest number of instructional rooms with Internet access; (2) the least favorable ratio of students to computers; and (3) the least

\begin{footnotesize}
\begin{enumerate}
\item See id. at xvii.
\item See DEP’T OF COMM., A NATION ONLINE: HOW AMERICANS ARE EXPANDING THEIR USE OF THE INTERNET, 21 (2002), available at http://www.ntia.doc.gov/ntiahome/dn/. The rate of Internet access for Hispanic Americans, 31.6 percent, is even more dismal.
\item See id.
\item See id at 78 (2002).
\item Id. at 78-79. In addition, the Bush administration’s recent decision to sharply reduce funding for programs that promote technology access, amounting to a reduction of $100 million in funding for community grants and training programs, will obviously result in even greater technological isolation for poor and minority communities. See Benton Foundation, Bush Abandons National Strategy to Bridge the Digital Divide (2002) available at www.benton.org/press/2002/pr0211.html/.
\end{enumerate}
\end{footnotesize}
advanced type of connections for Internet access. Though school Internet access has generally increased across the board since 1996, the rate of increase varies with minority enrollment and the poverty level in each school. Schools serving poor and minority children are almost 25 percent less likely to have enough computers for each student. The impact of this disparity is two-fold: poor and minority students are the least likely to be afforded computer and Internet access at school, and that lack of access has a direct impact on these students’ academic achievement.

This evolving digital divide in the K-12 realm has the potential to adversely affect student achievement. The absence of computer and Internet access has a demonstrated adverse effect on the acquisition of learning skills by students, resulting in lower student achievement scores, particularly for poor and minority students. For example, recent DOE studies have shown that students who use computers outperform their peers on standardized achievement tests. As evidenced in other studies as well, the use of computers in learning programs has provided tangible improvements in achievement scores. The DOE-funded Center for Research on the Education of Children Placed at Risk (CRESPAR) detailed the impact of its Computer-and Team-Assisted Mathematics Acceleration (CATAMA) program in a recent study. CATAMA, a ten-week mathematics class that actively integrates computers, replaced an elective course in one of CRESPAR’s Talent Development middle schools. The study reported that more than twice the number of students at the school who participated in the CATAMA program met the minimum citywide criteria (85th percentile) than did their peers who did not participate. The researchers concluded that the CATAMA program helped students make “dramatic gains in their procedural knowledge and skills.” Further significant differences in student performance

171. Poverty is measured in terms of the percentage of students per school that are eligible for free or reduced-price school lunches, and those eligibility requirements were revised in 2000. See id. at 2.
172. See id. at 3 (May 2001).
173. See note 177, infra, and associated text.
175. Id. at 7.
176. Id.
were recently attributed to use of the Internet and computers in the classroom, at school, and at home in multiple subject areas, including science, U.S. history, geography and civics. In a 2001 National Center for Education Statistics (“NCES”) survey, test scores for elementary students in all subject areas was found to increase in direct proportion to the extent of computer use.\footnote{See \textit{Dep’t of Ed., Statistics, Average Science Scores by Students’ Reports on Use of the Internet at Home, 2000}, available at http://nces.ed.gov/ nationsreportcard/science/results/internetuse.asp; \textit{Dep’t of Ed., Average U.S. History Scale Scores by Student’s Reports on Use of Computers, 2001}, available at http://nces.ed.gov/nationsreportcard/ushistory/results/computeruse.asp; \textit{Dep’t of Ed., Average Geography Scale Scores by Students’ Reports on Use of Computers, 2001}, available at http://nces.ed.gov/nationsreportcard/geography/results/computeruse.asp; \textit{Dep’t of Ed., Use of Computers and the Internet in Social Studies Classes, 2001}, available at http://nces.ed.gov/nationsreportcard/civics/findcompuse.asp.} Internet and computers access resulted in higher test scores at the fourth-, eighth-, and twelfth-grade levels.\footnote{See id.} In particular, science scores for elementary, junior high, and high school students were higher for those students who had Internet access at home.\footnote{See \textit{id}.}

Another study, sponsored by the DOE, concluded that technology can serve as a catalyst for changing schools in ways that will better support the acquisition of higher-order skills by all students.\footnote{\textit{Dep’t of Ed., Technology’s Role in Education Reform: Findings From a National Study in Innovating Schools}, 153-158 (Sep. 1995).} Upon conducting a series of nine case studies, the study’s researchers concluded that the use of technology increased student learning through involvement with authentic, challenging tasks and encouraged a culture that supports learning both inside and outside of the classroom.\footnote{See id.} Specifically, students developed better higher-order thinking skills, gained self-esteem and motivation, addressed matters of greater complexity, and developed better technological and pedagogical skills.\footnote{\textit{Id. at} 7.}

This relationship between Internet access at home and learning makes the lack of technology access for poor and minority students even more intolerable. Poor students traditionally achieve lower test scores than students whose families have higher income levels.\footnote{\textit{Dep’t of Ed., Average Science Scale Scores by Student Eligibility for Free/Reduced Price Lunch Program: 1996 and 2000}, available at http://nces.ed.gov/nationsreportcard/science/results/lunchprogram/asp.}
test scores of Hispanic and African-American children consistently trailed those of White American students by nearly 20 percent over the four-year period included in the most recent National Center for Education Statistics (NCES) study. The NCES statistics suggest that with computers at home, the test scores of poor and minority students would likely improve. By contrast, without access to this technology, the improvements witnessed by technology-rich groups will inevitably leave the “have-nots” further behind.

Public libraries are the traditional means of assuring broad public access to information services, without regard to income. Even in 1996, library and so-called information budgets were reportedly “on express funding trains headed in opposite directions.” Universal service allocations to public libraries have declined consistently since then, reducing resources just as more are required to meet the needs of developing technology. Some public library systems in the U.S. have even been forced to close branches in order to fund Internet resources for their patrons. Most recently, the American Library Association (ALA) expressed disappointment at the small appropriation for school libraries allotted by the Bush administration as “not nearly enough” to meet growing needs.

A survey by the National Commission on Libraries and Information Science (hereafter the “Library Commission”) confirms that access to the Internet in public libraries has increased dramatically—from 44.4 percent in 1996 to 83.6 percent in 1998—

184. See id.
187. See American Libraries, SLC Gets 3,000 Applications for Initial Universal-Service Discounts (May 11, 1998) (“Last December the FCC voted to reduce by 38 percent the amount that long-distance companies will pay . . . to $625 million for the first half of 1998.”).
since the “e-rate” provisions of the 1996 Act were first instituted. Nevertheless, access remains far from comprehensive, the survey reports, and the access disparity between high-poverty and low-poverty areas persists as well. It also found that smaller libraries are less likely to benefit from e-rate funds and, as a result, have lower connectivity rates. The survey’s connectivity figures, however, include all kinds of Internet access in each library surveyed, including Internet connections exclusively for the use of library staff.

In contrast, an earlier study by the ALA and the Library Commission indicated that only one in seven U.S. public library systems are able to offer public access to the Internet in all of its branches. Significantly, despite signs of progress, the Library Commission concluded that “[t]here is much work still to be done to define and achieve effective public Internet access for all Americans.”

Given research showing that the highest-achieving students come from schools with good school libraries, the inability of the nation’s public libraries to fill the access gap left by its public schools is indeed unfortunate.

2. Economic and Political Consequences

The division between the nation’s information haves and “have-nots” is even more significant, considering that Americans are increasingly dependent on Internet access for basic employment and commercial needs, as well as for participation in the political


191. Id. at 19. The Library Commission acknowledged, however, that their survey did not reflect the disparate library access in low-income areas. Id. at 28.


193. Id. at 17.

194. See AMERICAN LIBRARY ASSOCIATION, Fact Sheet (Nov. 1998).


196. See LANCE, KEITH CURRY. DEP’T OF ED., THE IMPACT OF SCHOOL LIBRARY MEDIA CENTERS ON ACADEMIC ACHIEVEMENT, 1994 (students in schools with well-equipped library media centers and professional library media specialists perform better on achievement tests for reading comprehension and basic research skills).
The most recent Bureau of Labor Statistics data indicates that 15 percent of unemployed jobseekers use the Internet to find work. Use of Internet resources in the job search exceeded those of such traditional methods as private employment agencies, networking with friends or relatives, and using unions or professional organization registers. The number of websites devoted to providing employment services has increased substantially in the last several years. Importantly, low-income jobseekers are much more likely to rely on the Internet to search for employment than are high-income jobseekers. More people at income levels of $15,000 or below use the Internet to conduct job searches than persons of any other income group.

A digital divide therefore substantially impedes employment searches, especially for those jobseekers in the lowest-income categories. In many instances, lack of Internet access completely forecloses some job opportunities insofar that businesses are expanding their use of network infrastructure because it facilitates the use of off-site personnel and services (see Table 2).

<table>
<thead>
<tr>
<th>Home Workers</th>
<th>Total</th>
<th>Computer</th>
<th>Modem</th>
<th>Fax</th>
<th>Own Equipment</th>
<th>Employer Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>21,478</td>
<td>12,785</td>
<td>7,533</td>
<td>6,165</td>
<td>13,413</td>
<td>1,516</td>
<td></td>
</tr>
</tbody>
</table>


198. See Peter Kuhn, Job Search Methods: Internet Versus Traditional, 123 MONTHLY LABOR REVIEW Oct. 2000, at 10.

199. See id. at 11.


202. See Table 2; see also Donald Katz, The New E-Office, 53 BUSINESS WEEK 176, 179 (Dec. 2001).
Further, the traditional government safety nets available to the unemployed, including measures such as federal welfare programs, are increasingly becoming digital. In particular, electronic delivery programs for both food stamps and Medicaid are currently in use. Without adequate access to Internet technology, those most in need of these services will be least able to access them. The interruption in receipt of these essential benefits will unquestionably imperil an already vulnerable segment of our society.

Even for employed Americans, the Internet has become an increasingly indispensable resource. Presently, on-line retailers can offer groceries, all varieties of consumer items, and even prescription medication over the Internet. In particular, the banking and financial services industries have recently shifted their focus to the on-line market. Partly as a consequence of this trend, banks located in the nation’s inner cities are increasingly the targets of closures. As Internet banking becomes increasingly popular, inner-city residents might loose not only rudimentary daily bank services, but also access to on-line opportunities for home mortgage services and small-business loans.

More fundamental than the economic harm threatened by the growing digital divide, however, is the impact of that disparity on political participation. In an age in which both the U.S. House of Representatives and the U.S. Senate sponsor websites, and in which Internet campaigning is commonplace in local, state and federal elections, a lack of Internet access for low-income and minority voters constitutes a genuine threat to our democracy. Given the political and economic expediency of on-line elections, Internet voting is clearly the wave of the future. In the wake of the recent

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203. See Hammond at supra note 197, at 194-99.
206. See id. at xx.
207. See http://www.house.gov, and http://www.senate.gov, respectively. Both sites provide information on pending legislation—sometimes including full text, policy statements for members, contact information for representatives and staffers, committee listings, and links to other government information services.
208. See, e.g., Rebecca Fairley Raney, Former Wrestler’s Campaign Got a Boost from the Internet, N.Y. TIMES, Nov. 6, 1998, at B10; Christy True, Presidential Candidates Cast for Votes in Cyberspace, SEATTLE TIMES, Feb. 27, 2000, at C1.
Florida presidential election controversy, the enhanced potential for accuracy in an electronic forum makes Internet voting even more attractive. However, it has the potential to exacerbate the upper-class bias that already characterizes the American electorate. Given that Internet voting is of greatest utility to those who already have Internet access at home, it is predominantly white, urban households with incomes of $35,000 or more that will most likely benefit from this convenience. Electronic voting has already become a reality in one major election, the Arizona 2000 Democratic presidential primary, although critics voiced concerns about the fairness of the process to poor and minority communities. Lacking a vision of universal service that includes wholesale access to information technology for all Americans, the future of on-line voting, employment and economic services for minority, low-income, and inner-city voters is one of increased marginalization. To truly bridge the digital divide between these information have and have-nots, meaningful access to computers and Internet technology must be afforded to all Americans.

B. The FCC’s Efforts to Bridge the Digital Divide

The FCC has acknowledged that its past universal service efforts focused solely on basic telephone service, and that it interpreted the 1996 Act as mandating a broadening of its efforts to include the provisioning of advanced telecommunication services. The Commission has further acknowledged that it chose to interpret that legislation as excluding low-income consumers from any associated technology benefits. To achieve parity for the nation’s information have-nots, the Commission maintained, it has instead applied the universal service provisions to providers of education services—that is, to schools and libraries—in poor and urban areas of the nation. The 1996 Act, however, addresses the nation’s technology disparities along several fronts. In one section of the Act, Congress speaks to the potential benefits to the nation’s schools and libraries of providing access to advanced telecommunications services, recognizing “[t]he

210. See id. at 1122.
211. See id. at 1119-1121.
212. See Ben White, Online Balloting: A Question of Fairness; Justice Department Challenges Arizona’s Use of Voting by Computer in Primary, WASH. POST, Mar. 19, 2000, at A9.
213. NOPR, supra note 85, at 5-6.
214. NOPR, supra note 85, at 8, ¶ 11; see also discussion infra at Part VII.A.1.
rapidly developing array of Internet and other interactive computer services available to individuals Americans...[as] an extraordinary advance in the availability of educational and informational resources to our citizens.”

To encourage the development of these services in schools and libraries, nationwide, this section creates a discount program to aid in the purchase of Internet and other telecommunications services. Pursuant to that mandate, the Commission established its schools and libraries universal service support mechanism. Through this mechanism, eligible schools and libraries, and consortia that include eligible schools and libraries, may receive discounts or e-rates for eligible telecommunications services, Internet access, and internal connections. The discounts available to schools and libraries range from 20 percent to 90 percent of the pre-discount price for the supported services, varying based on the school’s or library’s economic need and its location in an urban or rural area. The Commission also concluded that there should be an annual cap of $2.25 billion on these expenditures.

More recent studies suggest that e-rate funding has been inadequate to provide comprehensive Internet access in public schools and libraries. Not surprisingly, accessibility remains least likely in poor and minority communities. Subsequently, because student achievement has been linked to computer and Internet

217. 47 U.S.C. § 254(h)(2002). Discounts rates range from 20 percent to 90 percent, based on need, and are popularly referred to as the Equity Rate or “E-Rate.”
218. Id.
220. 47 C.F.R. § 54.505. These discounts are popularly referred to as the Equity Rate or “E-Rate.” A school’s level of economic disadvantage is defined by the percentage of its students eligible for either a free or reduced price lunch under the national school lunch program. For further discussion of eligibility, see 34 C.F.R. §200.28(a)(2)(i)(R). The Commission has recently initiated a rulemaking proceeding to simplify and streamline the operation of the schools and libraries support mechanism. See Schools and Libraries Universal Service Support Mechanism, CC Docket No. 02-6, Report and Order, 17 FCC Red 11521 (2002).
221. One legal scholar has noted:

The provisioning of libraries and schools is laudable and pragmatic, but it is also problematic. Based on the...budgetary wars over education funding...it is reasonable to conclude that the pool of...education dollars is likely to shrink relative to need...Second, many communities are closing local libraries branches for budgetary reasons. Thus, an access policy for low-income communities solely based upon access via schools and libraries will inadequately serve some communities, while leaving out many other communities.

accessibility.\textsuperscript{222} Disparate accessibility has contributed to unequal education opportunities and the creation of a digital divide among our nation’s young and old alike. In the several years since the FCC issued their original order implementing the statutory provisions pertaining to schools and libraries, computers have become highly integrated into the learning programs of many schools. However, as they have become essential tools for classroom learning and home study, the scarcity of computer resources in the schools and homes of poor and minority students increasingly isolates these groups from reaping the educational benefits of the digital age.

\textbf{VII. A Possible Solution: The Legal Basis and a Proposed Model and Funding Source}

Computers have increasingly become a part of the classroom environment. The NCES reported that 77 percent of all public schools had Internet access in the classroom in 2000.\textsuperscript{223} The NCES further maintained that teachers use computers to facilitate teamwork between students, to provide interactive lessons, and to teach research skills.\textsuperscript{224}

However, poor and minority students are the least likely to have adequate computer resources available at school. Those schools with the greatest minority enrollment and the most students eligible for free and reduced price lunches are least likely to provide classroom-level access to the Internet.\textsuperscript{225} Moreover, training for teachers in

\begin{itemize}
\item \textsuperscript{222}\textit{Deputy Secretary of Education, Madeleine M. Kunin, in her testimony before the United States Congress, explained that “research indicate[s] that . . . [a] comparison of computer-based instruction . . . with more traditional instructional formats indicate that [computer-based instruction is] as much as 30\% more effective.” Hearing before the Subcomm. on Labor, Health and Human Services, Education and Related Agencies of the Senate Committee on Appropriations. 103\textsuperscript{rd} Cong. (Apr. 4, 1995), Peter Pae, \textit{Low-Income Pupils Get Computer Links}, WASH. POST, Sep. 27, 1998 at B1; (teachers and administrators have been concerned that students without home computers are at a disadvantage in completing assignments and computer skills). Kenneth J. Cooper, \textit{In Classroom, Widening the Web}, WASH. POST, Dec. 20, 2000 at A2 (Bipartisan commission called for changes in federal regulations for students who take courses over the Internet), Kenneth J. Cooper, \textit{Internet at School is Changing the Work of Students—and Teachers}, WASH. POST, Sept. 5, 2000, at A2 (There is preliminary evidence that some students learn more using the Internet).}
\item \textsuperscript{223}\textit{See DEPT OF ED., BEYOND SCHOOL-LEVEL INTERNET ACCESS: SUPPORT FOR INSTRUCTIONAL USE OF TECHNOLOGY, 3 (Apr. 2002).}
\item \textsuperscript{224}\textit{See DEPT OF ED., TEACHER USE OF COMPUTERS AND THE INTERNET IN PUBLIC SCHOOLS, U.S. DEPARTMENT OF EDUCATION 2 (Apr. 2000).}
\item \textsuperscript{225}\textit{See id. (40 percent of schools with 50 percent or more minority enrollment had classroom Internet access, compared to 38 percent of schools with less than 6 percent minority enrollment; 44 percent of schools where 71 percent or more students qualified for}}
\end{itemize}
Internet instruction and assistance for students in using the technology were similarly lacking for schools dominated by poor and minority students, a fact that may explain why teachers in schools with higher poverty levels were less likely to use computers for classroom instruction. Even among schools with computers in the classroom, teachers have reported that too few computers were available for their classroom use to be practical, and that outdated computer equipment was a significant impediment to their meaningful use of the Internet to support classroom instruction. In sum, the benefits of computer and Internet instruction in the classroom are often denied to poor and minority students, either because no classroom computers are provided for these students, too few are provided, or the equipment available is too outdated to be useful. Importantly, even if functional, up-to-date computers were available to poor and minority students, studies have shown that having the additional benefit of access to the Internet and computers in the home is essential to ensuring technological parity.

As of August 2000, more than half of all homes in the United States—four million households—contained at least one computer. This finding represented an increase of more than one hundred percent since 1993. Internet access in homes has more than doubled since 1997. Students are therefore far more likely to use computers and the Internet as a homework aid and research tool. Indeed, more than two-thirds of junior high and high school students reported that they rely on the Internet in this way. Even elementary school students increasingly report the use of the Internet to complete

226 See id.
228 DEPT OF ED., TEACHERS’ TOOLS FOR THE 21ST CENTURY, at iv (2000). A recent study observed that teachers might be more likely to integrate computers and the Internet into classroom instruction if adequate equipment and connection were available to the students. Id. at ii.
230 See id.
231 See id.

What is critical for the purposes of this article is that the NCES report, as discussed earlier, has demonstrated that test scores for elementary students, in all subject areas, increase in direct proportion to the extent of these students’ computer use. The study further reported that Internet and computer use, both in school and at home, resulted in higher testing scores for students at the fourth, eighth and twelfth grade levels. Moreover, the science scores for elementary, junior high, and high school students were higher for those students who had Internet access both in school and at home.\footnote{234}{See supra note 177.}

Despite these promising figures, however, only 43 percent of African American children and 37 percent of Hispanic American children have computer or Internet access at home, compared to 77 percent of white children.\footnote{235}{See id. at 2.} This disturbing trend can only be exacerbated by the fact that low-income and inner-city households are the least likely to have access to Internet technology.\footnote{236}{See id. at 3.} Consequently, poor and minority students risk missing the educational opportunities that their more affluent white counterparts are free to exploit.\footnote{237}{See supra note 177.} Moreover, despite the demonstrated benefits of computer use in learning, e-rate funding through the 1996 Act has been sorely inadequate to provide the necessary opportunities to all students. Greater national efforts must be made to provide Internet and computer access in the homes of poor and minority students. Stated another way, additional efforts must be undertaken, immediately, to bridge the ever-increasing digital divide.

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\footnote{234}{See supra note 177.}
\footnote{235}{See id. at 2.}
\footnote{236}{See id. at 3.}
\footnote{237}{Computers have also become a tool for parents as well. See Bruce P. Mehlman, Assist. Secretary of Commerce for Technology Policy, “The Bush Administration’s High Tech Agenda,” (June 26, 2001), available at http://www.ta.doc.gov/Speeches/Mehlman-010626.htm (describing President Bush’s plan to require all States to publish school report cards on the Internet for parent use); Amy Frazier, Student Laptops Give Parents a Boost Too, WASH. (D.C.) POST, Dec. 20, 1998, at A18.}
A. A Legal Analysis of the Universal Service Provisions

I. The FCC’s Interpretation: An Opportunity Missed

As discussed earlier, Section 254(c)(1) of the 1996 Act specifically acknowledges that “universal service is an evolving level of telecommunications services,” and requires the FCC to revise this definition periodically to take into account “advances in telecommunications and information technologies and services.” It also embraces a dynamic characterization of universal service that is essential to education, public health and safety and that speaks of fostering and ensuring access to innovation and technological progress. Whereas the Commission has acknowledged that it previously “focused on bringing basic telecommunications services to as many American homes as possible,” the 1996 Act requires it to “focus specifically on advanced telecommunications and information services.” Indeed, the original Notice of Proposed Rulemaking (NOPR) specifically sought comment on which advanced telecommunications services should be provided. In its discussion of “low-income consumers,” however, the NOPR limited the focus of its inquiry to establishing a “benchmark” for comparing the range of “telecommunications and information services” being offered in various urban areas.

The relevant language of Section 254, crafted to address the clear disparities in access to technological advancements, discussed low-income consumers in the context of their accessibility to advanced telecommunications services. The Commission chose to base its interpretation of the Act on carving out two separate categories of intended beneficiaries: (1) a “core” group of services for low-income...

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239. Id. (Supp. III 1997). See also Jim Chen, A New Regulatory Regime for Federal-State Relations and Universal Service Support: Standing in the Shadows of Giants: The Role of Intergenerational Equity in Telecommunications Reform, 71 U. COLO. L. REV. 921, 940 (Fall 2000) (“... Section 254 [is] revolutionary ... [it] acknowledged not only POTS [plain old telephone service] but also PANS, ‘pretty amazing new services,’ for an information-driven economy.”).
240. NOPR, supra note 85, at 5-6, ¶ 5. (emphasis in original)
241. Id. at 5, ¶ 4. One commentator observed that, “[a]long with quality services available at just, reasonable, and affordable rates, citizen will need affordable, quality machines such as phones, modems and computers.”(Comments of Benton Foundation, In the Matter of Federal-State Joint Board on Universal Service, CC Docket No. 96-45 at p. 4 (Apr. 12, 1996)) (emphasis in original).
242. NOPR, supra note 85, at 6, ¶ 6.
243. See § 254(b)(3).
consumers, and (2) advanced telecommunications and information services for providers of health care or educational services. Based on the parameters established by the NOPR, the Commission effectively precluded from universal service support the essential services needed to begin bridging the ever widening digital divide. Moreover, on November 7, 1996, when the Joint Board issued its recommendation to the Commission, it urged that the principles enumerated for universal support to low-income customers be augmented to include a competitive neutrality requirement. The language of the 1996 Act, however, had imposed a competitive neutrality requirement solely to the sections pertaining to libraries and education providers. This Joint Board recommendation, which was subsequently adopted by the Commission, aided in providing additional constraints on the potential benefits afforded by the statute's language. The Joint Board's recommendation that universal service support should not be biased toward any “recipient and contributor to the universal service support mechanism,” nor “toward any particular technologies,” served as the Commission’s rationale for rejecting various proposals that embraced the far more forward-thinking notion that universal support mechanisms should be made available for more than basic telephone service.

To several observers, the Commission’s interpretation of the provisions of Section 254 was unduly narrow in scope and failed to capture the clear intent of the statute's language. At the time the

244. NOPR, supra note 85, at 8, ¶ 11. See also the missed opportunity to act on the provisions that require that low-income consumers have access to advanced telecommunication services when the Commission focuses again on the “comparability of access to services available throughout the country, as well as on the comparability of rates.” Id. at 10-11, ¶ 14.

245. See Angela J. Campbell, Universal Service Provisions: The “Ugly Duckling” of the 1996 Act, 29 CONN. L. REV. 187, 200. (Fall 1996) (“... the Commission is directed to define universal service to promote access to advanced telecommunications and information services ... ”(citing § 254(b)(2) pertaining to low-income consumers)). In fact, the Commission invited comments on whether the following services should be included among those core services receiving universal service support: (1) voice grade access to the public switched network, with the ability to place and receive calls; (2) touch-tone, (3) single party service; (4) access to emergency services (911); and (5) access to operator services. NOPR, supra note 85, at 12, ¶ 16.


Commission embarked on its statutory mission to implement the provisions of Section 254, the concept of universal service had long-embodied a national commitment to avoid the “division of our people among telecommunications . . . ‘haves’ and ‘have-nots.’” Most significantly, Congress had plainly embraced a dynamic, evolving definition of universal service, and had clearly rejected the FCC’s traditional interpretation of affordable basic telephone service to all Americans as the mandate of the Communications Act of 1934.251

2. A More Forward-Thinking Interpretation

In its July 20, 2002, decision, the Commission dismissed the recommendation that the scope of universal service be expanded to include customer premise equipment (“CPE”).252 Its simple
explanation was that “federal universal service support mechanisms, pursuant to Section 254(c), cannot support customer premises equipment . . . [because] Section 254(c) expressly limits the definition of universal service to ‘telecommunications services.’”

Thirty years ago, however, when the telephone network was a government-sanctioned monopoly, equipment and services were intricately intertwined in the fundamental service provided by the local telephone companies. The local Bell telephone companies’ customers bought end-to-end service, because the companies supplied the switches, wires and basic telephone sets. This meant that customer premise equipment was a component of universal service.

As rules were changed to accommodate competition and the resulting alternative customer premise equipment suppliers, the rationale for universal provision of the telephone instruments by the local

Telecommunications for the Deaf, Inc. proposed that the scope of universal service be expanded to offset the cost of customer premise equipment such as Braille TTYs, which print text messages in Braille for people who are both deaf and blind. Id. The projected cost is approximately $6,500 per machine. See Comments of Telecommunications For The Deaf, Inc., In the Matter of Federal-State Joint Board on Universal Service, CC Docket No. 96-45 at i (Nov. 5, 2001).

253. Id. The Act defines “telecommunications service” as “the offering of telecommunications for a fee directly to the public . . .” 47 U.S.C. § 153(46). It defines “telecommunications” as “the transmission, between or among points specified by the user, of information of the user’s choosing, without change in the form or content of the information as sent and received.” § 153(43). However, though not defined, the Act does speak to “advanced telecommunications and information services,” id. § 254(b)(3), and “information technologies.” § 254(c)(1) Why these statutory terms were ignored by the Commission is unclear, but one must conclude that more was intended than basic telephone service, particularly given the Act’s proclamation that “[i]t shall be the policy of the United States to encourage the provision of new technologies and services to the public,” §157(a). Moreover, the Communications Act of 1934 contains particularly broad language that grants the Commission the authority to “perform any and all acts, make such rules and regulations, and issue such orders . . . as may be necessary in the execution of its functions.” See 47 U.S.C. § 154(i) (2001).

254. A typical telephone tariff read as follows:

No equipment, apparatus, circuit or device not furnished by the Telephone Company shall be attached to or connected with the facilities furnished by the Telephone Company, whether physically, by induction or otherwise, except as provided in this tariff. In case any such unauthorized attachment of connection is made, the Telephone Company shall have the right to remove or disconnect the same; or to suspend the service during the continuance of said attachment or connection; or to terminate the service.


255. Id. at 499. Originally, all wiring, as well as all CPE, was owned, installed, and maintained by the telephone company. The associated costs of the telephone network were allocated between intrastate and interstate communications and then bundled into the respective rates for those services. Id.
telephone company ceased. Telephones were deregulated and removed or unbundled from the list of services in the basic universal service set because they were affordable, transportable, and subject to uniform interconnection standards. \textsuperscript{256} Though the FCC acknowledged its authority to require the offering of CPE by local telephone companies, it determined that CPE could be unbundled from basic telecommunications services and that regulation of CPE was “no longer warranted.”\textsuperscript{257} Moreover, as the nature of customer premise equipment evolved into more complex instruments, the Commission considered the question of “whether CPE with information processing capabilities should be offered as part of a common carrier service,” and if so, “the structure under which carriers should offer such equipment.”\textsuperscript{258} The Commission, therefore, has acknowledged its authority to regulate and thus require local telephone companies to offer computer-type customer premise equipment. Moreover, though the FCC concluded that CPE should not be regulated, and thus subject to a definitional scheme that classified either the device or its functions as telecommunications or data processing, it clearly recognized its authority to have decided differently.\textsuperscript{259} To ensure the bridging of the “digital divide,” I am proposing, therefore, that we expand the scope of universal service to include the provisioning of CPE with capabilities similar to “information processing.” Specifically, I am proposing that we provide computers and Internet access in the homes of low-income minority students in the nation’s urban areas.

\textsuperscript{256} See \textit{In Re Second Computer Inquiry}, 77 F.C.C. 2d 384, ¶ 9 (1980) (“The continuation of tariff-type regulation over carrier-provided CPE neither recognizes the role of carriers as competitive providers of CPE, nor does it reflect the severability of CPE from transmission services. We conclude that CPE is a severable commodity from the provision of transmission services and that regulation of CPE under Title II is not required and is no longer warranted.”).

\textsuperscript{257} \textit{Id.}

\textsuperscript{258} \textit{Id.} at ¶ 134.

\textsuperscript{259} See \textit{Tentative Decision and Further Notice of Inquiry and Rule Making}, 72 F.C.C. 2d 358, ¶¶ 91-107 (May 17, 1979) (tentative decision). Adopted in 77 F.C.C. 2d 384, ¶ 282 (1980). The Commission explained that the rapid pace of technological evolution would promptly render obsolete any effort to draw distinctions among customer premises equipment based on processing functions. \textit{Id.} They also opined that classifying CPE as either communications or data processing could interfere with a vendor’s ability to adapt its equipment offerings to customer needs. \textit{Id.} Thus, the Commission concluded that its statutory mandate was best fulfilled if all CPE were deregulated and separated from the local telephone companies basic telecommunications service. \textit{Id.}
B. A Possible Model: Customer Premise Equipment for the Hearing-Impaired

If the 1996 Act’s directive to provide “advanced telecommunication services” to low-income consumers is interpreted to redress the digital divide problem, and thus reach beyond basic telephone service, much could be accomplished toward achieving a viable solution. Further, if we acknowledge that the language of Section 254 gives the Commission broad regulatory authority to develop policy and procedures to specifically address the issue of technology disparity, then it follows that the Commission has the authority to provide customer premise equipment in the form of computers to the needy low-income customers targeted by the Act. The notion of providing highly complex customer premise equipment as part of basic telecommunications services is not an alien concept to the regulatory community. For more than twenty years, federal and state governments have made provisions of customer premise equipment to individuals with hearing impairments, to enable them to use telephone technology. Though each state provides a variety of equipment, the teletype (“TTY”) machine is the basic telephony equipment that has been located on the premises of the customer for many years.

Every state now provides customer premise equipment and other special services for the disabled through the Telephone Relay Service (“TRS”), funded either through voucher programs or statewide telephone bill surcharges. These state programs, in particular, serve as a model for bridging the technology gap for low-income families for it demonstrates the viability of providing another form of customer premise equipment: computer technology.

1. The ADA’s Telephone Relay Service

The Telephone Relay Service was established pursuant to the mandate in Title IV of the Americans with Disabilities Act

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260. While the standardized federal program was established by the passage of Title IV of the Americans With Disabilities Act, various states pioneered equipment distribution programs well before the ADA mandated the requirement. California, Florida, Minnesota and Connecticut created the first subsidization programs, beginning with equipment provisions and culminating in state-wide relay systems funded by telecommunications surcharges. See discussion infra p. 58.

and the Federal Communications Commission established the program’s parameters. FCC rules, first promulgated in 1993, required all telephone companies and other common carriers that provide voice transmission services to provide TRS in the areas they serve, and to set mandatory operations, technical and functional standards for the services. As is the case with basic telephone service, the administration of the TRS is guided by universal service principles described in the Communications Act of 1934, which authorizes state and federal government to take all steps consistent with the Act and determined “necessary and appropriate for the protection of the public interest . . . and necessity.”

Section 225 emphasized that the purpose of providing a Telecommunications Device for the Deaf (“TDD”) is “to make available to all individuals in the United States a rapid, efficient nationwide communication service.”

The TRS employs a number of methods to reach hearing and speech disabled customers. Eligible customers are provided with a text or TTY telephone, which allows them to type in a message after placing a call to a communications assistant. The communications assistant then dials the number the customer wishes to call, and translates the typed messages verbally. The hearing impaired consumer does not pay for the assistance of the operator, or the text telephone hardware itself. Some state programs, however, require participants to meet income guidelines before providing equipment at no charge, and often use federal poverty guidelines in making this decision.


263. 47 U.S.C. § 225(b) (2001). The TRS is administered at the federal level by the Universal Service Administration Company (“USAC”), the National Exchange Carrier Association (“NECA”), and the Commission.

264. See 47 C.F.R. § 64.601-64.605 (2001).


determination. Funding for the programs also varies, with some states employing vouchers and others raising funds through telephone bill surcharges.

Moreover, Congress made clear its intentions that the development of telephony equipment for the hearing impaired keep pace with technology. Congress intended that regulations implementing the TRS program “do not discourage or impair the development of improved technology.” In an effort to strengthen the program, beginning March 1, 2001, the Commission added Speech to Speech (“STS”) services to the list of required service. STS employs communications assistants, trained to understand the speech patterns of speech-impaired callers. They directly translate the impaired speech into conventional speech patterns for a caller on the other end of the line.

2. Pre-ADA State Programs

One could argue that the provisioning of TTY equipment for the disabled was specifically authorized by the language of the ADA, and therefore an inappropriate model to commend for consideration. However, a number of states had programs for the distribution of customer premise equipment to the hearing impaired long before the Americans with Disabilities Act mandated the creation of a national Telephone Relay Service.

Fourteen years before the FCC issued regulations mandating state relay service participation, California’s Public Utilities

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270. Vouchers vary from Iowa’s program, which covers approximately 95 percent of the cost of the equipment, to the Maine program, which only finances “a portion” of the cost, requiring that local or private funds make up the difference. See Iowa Department for the Blind, Information for Iowans who are Deaf-Blind (last visited Feb. 20, 2004) available at http://blind.state.ia.us/indepliv/deafblind.htm; Maine Center on Deafness, supra note 269.

271. Surcharges range from state to state. Minnesota must not exceed twenty cents per line access per month. Minn. Stat. § 237.52 (2003). In contrast, Oklahoma may not exceed a surcharge of five cents per line, per month. 63 Okl. St. § 2418 (2003).


274. F.C.C. Decision No. 90-571 (June 26, 2001). The FCC also encouraged states to commit even more resources by establishing the Video Relay Service (“VRS”) as a supplement to teletype facilities. This service will even allow a person using sign language to visually communicate with a VRS interpreter. Id.
Commission established a program for ensuring access to telephone service for the hearing impaired.\textsuperscript{275} The language of the California Commission’s decision explained that it had “discretionary authority to provide special facilities at rates less than fully allocated cost, in order to serve the public interest by providing hearing impaired and speech impaired persons the ability to communicate over the telephone network.”\textsuperscript{276}

California extended this program by implementing the California Relay Service (“CRS”) in 1983, which provided a network with which TDD users could communicate with the non-hearing impaired. The CRS uses third-party intervention to provide 24-hour contact with any other telephone subscriber.\textsuperscript{277} All telephone equipment for the disabled in California is provided free of charge to the recipients, funded by an end-user charge collected by telecommunications carriers and remitted to the California Public Utilities Commission.\textsuperscript{278}

\textsuperscript{275} CAL. PUB. UTIL. COMM’N DEC’N. NO. 90642 (July 31, 1979), 2 CPUC 2d 89.

\textsuperscript{276} Id. The Commission also authorized an initial appropriation of $12 million to fulfill that goal. Id. Subsequently, the California Legislature enacted Senate Bill 597, creating section 2831 of the Utilities Code, and providing for a program to fund communication devices for the deaf through telephone bill surcharges. There were no income requirements for the program, eligibility was established upon certification of speech or hearing impairment by a licensed professional. Decision No. 92603, 5 CPUC 2d 305. The program also funded equipment for schools or organization representing the deaf or hearing-impaired, and state agencies having significant contact with the public. See S.B. 597 (Cal. 1979), Assemb. Bill 3369 (1984), S.B. 227 (Cal. 1984).

\textsuperscript{277} Cal. Relay Service, S.B. 244, Ch 920 (Cal. 1983). In 1985, still eight years before the ADA mandated a relay service, the California Public Utilities Commission supplemented the two existing programs with additional devices, including specialized telecommunications equipment to consumers with hearing, vision, mobility, speech and cognitive disabilities. Telecomms. Devices for the Disabled Act, SB 227, Ch. 1182 (Cal. 1985), adding section 2881.1 to the Cal. Public Utilities Code. They authorized the provision of equipment like amplifying devices, telephone ringer signals, speakerphones and cordless phones. Supplemental Telecomms. Devices for the Disabled Act, S.B. 60, Ch. 585, Stats. (Cal. 1985), amending subsections 2881(c) and 2881(d) and adding subsection 2881(e) to the Ca. Pub. Util. Code.

\textsuperscript{278} See CAL. PUB. UTIL. COMM’N, CTAP AND DDTP (2001), at http://www.ddtp.org/. All three programs are collectively known as the Deaf and Disabled Telecommunications Program (“DDTP”), doing business as the California Telephone Access Program (“CTAP”). In addition to traditional teletype equipment, California now provides Voice Carry Over (“VCO”) telephone, three-way calling for use with two-line VCO, flashing light or vibrating device to indicate that the phone is ringing, and telephone relay service. Id. The California Relay Service’s most recent request for proposal also provided that prospective relay service centers would be required to offer “Web Chat Relay,” a function allowing consumers to send messages from their computer or Internet-compatible device to a relay center, rather than from a TTY. See CAL. DEAF AND DISABLED TELECOMMS. PROGRAM, REQUEST FOR PROPOSAL FOR CAL. RELAY SERVICES (Aug. 17, 2001), available at http://www.ddtp.org/EquipmentAndServices/CRS/
Florida created its own customer premise equipment subsidization program in 1984. The Florida Public Service Commission perceived a need in the hearing impaired community for practical access to telecommunications devices, and determined to fill that need by providing specialized customer premise equipment, funded through a telephone surcharge on all telephone company subscribers’ phone bills. The Florida Commission, obviously finding that its enabling legislation granted it the authority to take such action, decreed that such an approach was “fair, just and reasonable, [and] in the public interest . . . .”

While these states have some of the earliest pre-ADA premise equipment distribution programs, they are far from alone. At least six other states instituted some form of subsidized equipment distribution for the hearing impaired before the ADA required it, including Oklahoma (1986), New York (1989), North Carolina,
and several others provided discounts on certain telecommunications services for the deaf and hearing impaired.

3. The State Programs: A Model for Implementation

Many states now provide equipment for the hearing impaired to access telephone services, but each state has its own system for funding, procuring and distributing that equipment. Though each state provides a variety of equipment, including amplifiers, visual modular signal relays, and even connections for Video and Web-based message transmittal, the teletype machine is still the mainstay. A teletype machine, or “teletypewriter,” can cost between $200 and $600, based largely on the features it provides.

California funds its program through a surcharge of no more than one-half of one percent of subscriber’s interstate telephone service fees. That surcharge is currently 0.48 percent. California’s Public Utilities Commission, operating through the Deaf and Disabled Telecommunications Equipment and Service Program (“DDTP”), is authorized to procure the customer premise equipment from “any telephone corporation subject to its jurisdiction” that complies with the requirements. Service and equipment providers are selected through a competitive bidding process. Bidders are divided into those competing for a contract to provide the actual relay service call centers, and those hoping to provide the network services

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288. See NAT’L ASSOC. OF REGULATORY UTIL. COMM’RS, NARUC ANNUAL REPORT ON UTILITY AND CARRIER REGULATION, Table 94 (1987) (available with the author). In addition, a Federal Relay Service was instituted in 1988, to assure the access of hearing impaired and speech-impaired individuals to federal departments, agencies, and employees, though it did not provide equipment directly to individuals. Telecomms. Accessibility Enhancement Act, Pub. L. 100-542, 102 Stat. 2721 (1988).
289. See Institute for Disabilities Research and Training Inc., TTY Access With My TTY (2002), at http://www.idrt.com/TTY.html. The high end of the range, one could reasonably argue, is within close proximity to the cost of many computer models.
necessary to transmit calls to and from those call centers. Bidders must consent to providing a choice of a variety of speech-enhancing and teletype phones of more than fifteen different brands. The most recent six-month budget for the DDTP's distribution of funds for equipment distribution and service is $27,061,998.

Finally, California's enabling statute also explicitly provides for the regulatory agency to “perform ongoing assessment of” the kind of technology used in its service and to “expand the scope of the program to allow for additional access capability consistent with evolving telecommunications technology,” when appropriate. Pursuant to that goal, California has recently announced a request for proposal for the supply of fax machines for its hearing impaired and otherwise disabled customers.

Florida's system, authorized through the Telecommunications Access System Act of 1991 (“TASA”), is equally instructive. TASA created an administrator for its distribution program and relay service, in the Florida Telecommunications Relay, Inc. (“FTRI”), a non-profit corporation formed by local exchange telephone companies, and approved by the Florida Public Service Commission. FTRI funds its distribution program through telephone surcharges of no more than twenty-five cents per access line per month. The surcharge rate was approved at twelve cents per line in 2001. The administrator is authorized to approve purchases of teletype machines and other customer premise equipment of up to $5,000 per individual. These purchases are made

300. Id.
301. Id.
The Florida Public Service Commission reported that FTRI had over 218,000 individuals in its client base in 2001. The FTRI budget was approved at $14,784,298 for the 2001-2002 fiscal year. Of that amount, $1.1 million was allotted for equipment distribution and training, and $3 million was approved for equipment and repair.

In contrast to the surcharge-funding systems in California and Florida, Texas provides vouchers to the disabled, which may be used toward the purchase of TTY devices. The value of the voucher is based on the cost of the “basic device or service necessary for the applicant to access the telephone.” The Texas Universal Service Fund provides funding for all vouchers. The Texas Commission for the Deaf and Hard of Hearing determines a “reasonable price” for a basic telecommunications device, and distributes vouchers to eligible applicants guaranteeing payment of that amount to any distributor of such devices. Currently the Commission has set the price for a TTY at $419, but also lists other devices for the disabled, including big button telephones ($100) and even a Braille Telecommunications Device ($6,945). In the year 2000, the Commission reported state funding amounting to $1,064,909 million. The appropriation requests—$1,726,445 for 2002 and $1,760,445 for 2003—are much more ambitious, designed to served the expanded definition of the disabled that now includes 1.75 million Texans with hearing challenges.

303. Id.
305. Id. at Attachment A.
306. 40 TEx. ADMIN. CODE § 182.23(a) (2001).
313. Id. at 2. The Texas Public Utilities Commission has also provided an easy method of reimbursing distributors who sold equipment pursuant to a voucher. In order to be reimbursed, a distributor need only register with the Specialized Telecommunications Program (“STAP”), submit a copy of a cancelled voucher, a copy of a receipt including the
The California, Florida and Texas systems all provide valid models for funding and procurement of state systems for computer distribution. The funding for these various distribution models would, under my proposal, be funded through the federal universal service mechanism. The models identify a choice of telephone-bill surcharges and competitive bidding, or a voucher process that leaves purchases up to the individual within spending parameters defined by statute or regulation. Notably, the programs described provide for repair and replacement of aging equipment, as well as upgrades to keep pace with changing technology. Either method would be a functional choice for computer distribution. If, however, federal policy makers determine that the cost of funding the effort solely through the federal universal service mechanism is prohibitive, I would propose an additional or alternative funding source. I would urge that we re-target some of the federal dollars currently appropriated to provide higher educational opportunities for low-income students, and use such funds for the provisioning of education tools at a much earlier time in their education experience.

C. Possible Funding Sources and Participation Criteria

During the 2000 fiscal year, federal programs established to provide assistance and opportunity for the poor and disadvantaged in our nation amounted to $437 billion, or 4.1 percent of the gross domestic product. These “poverty” programs range from price charged and a description of the device provided, and provide proof of delivery of the equipment. See P.U.C. of Texas, Relay Texas/STAP: Vendor Guidelines for the Specialized Telecomms. Program /STAP (2002), at http://www.puc.state.tx.us/relay/stap/GUIDELInce.cfm. Every seven years, an individual becomes eligible to receive an additional voucher to replace their equipment. See TEX. CODE ANN. § 56.153(d) (2001).

314. Id.

Supplemental Educational Opportunity Grants, which award grants to needy undergraduates in amounts ranging from $100 to $4,000, to the Food Distribution Program for Indian Reservations, that distributed over $75 million in Food Stamp Act benefits to tribal organizations last year. These programs, particularly those directing funds at education, demonstrate a national commitment to subsidizing opportunities for those individuals in our society who are economically disadvantaged. I would argue, that greater benefits would inure to this particular population if funds were made available for the provisioning of computers and Internet access in grades as early as elementary school.

1. Retargeting Education Assistance

This nation has historically emphasized the importance of education. Congress has, for many years, expended hundreds of millions of dollars to ensure that the economically disadvantaged in our society have the opportunity to succeed by having access to education. The federal government funds fourteen different programs specifically designed to assist individuals of limited income to pursue a secondary, college or post-graduate education. In the fiscal year 2000 alone, these programs expended more than $19 billion. They range from Pell Grants to Loans for Health Professional Education.

Federal Pell Grants make up the greatest portion of federal grant assistance to students, and more than $7.3 billion was appropriated for that purpose for the 1999-2000 school year. Grants are available to undergraduate students enrolled in college who maintain progress in their course of study and meet specified statutory income eligibility requirements. Adjusting for any expected family contribution, Pell grants may be awarded for up to $3,000 per student.

316. Id. at 148.
317. Id. at 101, see also 7 C.F.R. § 253-254 (2001).
319. Id.
320. Id. at 140.
321. See 20 U.S.C. § 1070a (2001); 34 C.F.R. Part 690 (2000). The requirements also include that the recipient not have defaulted on any federally-assisted student loan, nor owe a refund on a Pell Grant or Supplementary Opportunity Grant, and must register for the Selective Service (if required). Id.
The Subsidized Federal Stafford and Stafford/Ford Loans Program also represents a substantial financial commitment on the part of the Congress. For example, an estimated $3.3 billion in net obligations were appropriated for fiscal year 2000.\textsuperscript{323} Under the program, the federal government pays the student, provides subsidies to private lenders, and insures the student loans.\textsuperscript{324} Eligibility for this program requires only enrollment in a qualified post-secondary institution and satisfaction of a test of economic need.\textsuperscript{325} Loan awards vary based on the year of study, ranging from $2,625 for the first year to $5,500 for the next three years, and may even reach $65,500 for undergraduate, graduate and professional education.\textsuperscript{326}

The substantial financial commitment Congress has made to education is only viable if it is effective. Clearly, without restructuring the timing of these educational opportunities, the nation will be unable to achieve the level of success envisioned by Congress. However, as this article proposes, federal and state governments should consider refocusing the objectives, timing, and, indirectly, the purpose of these program funds to support the purchase and maintenance of computers for every household identified as low-income by the 1996 Act. This does not mean that all low-income households should be given financial support through the universal service mechanism; rather, this support should be directed toward those households, and thus those children within them, that have


\textsuperscript{324} Id.

\textsuperscript{325} Id.

\textsuperscript{326} Id. at 145. While the Pell Grant and Stafford/Ford programs represent the most substantial monetary investment in education for persons of limited income, there are numerous other available programs. For instance, in fiscal year 2000 Congress appropriated (1) $870 million to the Federal Work-Study Program which finances part-time employment for undergraduate, post-graduate, and professional students. Id. at 146, (2) $100 million to the Perkins Loan Program which provides federal funds directly to institutions of higher learning in order that they might provide low-interest loans to students. Id. at 156, and (3) $25 million to the Leveraging Educational Assistance Partnerships Program which provides matching funds to states that establish aid programs for needy students. Id. at 157. There are even programs designed to fund post-graduate work specifically, like the Health Professions Student Loan and Scholarships, and the Fellowships for Graduate and Professional Study, which together were appropriated $157 million for fiscal year 2000. Id. at 153, 159.
already been identified as needing and deserving optimal support. More precisely, it should be targeted specifically toward the households of students who receive free lunches under the auspices of the National School Lunch Program. Only those students should be eligible to receive computers and Internet access based upon the universal service provisions of the 1996 Act.

2. Criteria for Participation: The National School Lunch Program Model

Established pursuant to the National School Lunch Act, the National School Lunch Program ("NSLP") provides a model of the methods that could be used to identify and distribute computers to children from families with limited incomes. The program follows federal poverty guidelines to subsidize all school lunches as well as to determine eligibility for its subsidized (free and reduced-price) lunches to low-income schoolchildren. It provides a basic payment for every lunch served, supplemented by 30 percent with state matching funds and by a special assistance payment for lunches served free or at a reduced price to lower-income students. The NSLP operates in more than 97,700 public and nonprofit private schools—more than 90 percent of all eligible schools.

Congress delegated the task of promulgating eligibility guidelines for the NSLP to the U.S. Department of Agriculture (USDA). Pursuant to USDA guidelines, the program's basic subsidy is passed on to all children, but free lunches are available only to those children whose current annual family income is at or below 130 percent of the federal poverty guidelines. Reduced-price lunches are available to those children whose family income falls between 130 percent and 185 percent of the guidelines. For FY 2002, the USDA reported that an average of 27.4 million children received a school lunch through this

program.\textsuperscript{333} Free and reduced price lunch recipients made up 56.9 percent of that number, totaling approximately 15.6 million children.\textsuperscript{334} About 47 percent, or nearly 13 million children, received free lunches.\textsuperscript{335} These children represent approximately 11.5 million families.\textsuperscript{336}

This article proposes that standards and structures similar to those employed by the NSLP could be used to facilitate the identification and computer equipment distribution to approximately 13 million eligible schoolchildren in the United States. The NSLP also provides a realistic model with which to determine and judge the potential costs associated with such a program.\textsuperscript{337}

\textbf{Conclusion}

It is increasingly evident that the United States is becoming a nation of information haves and have-nots. It is likewise clear that poverty is at the root of this deepening digital divide. Given their poverty, individuals and families at the lowest income levels are effectively excluded from reaping the benefits of modern telecommunications services. Governmental support for the distribution of customer premise equipment to households with members that are hearing-impaired across the nation has been justified in both historical and contemporary contexts when it is needed to address a public need.\textsuperscript{338} Governmental support to ensure


\textsuperscript{335} See id.; \textit{FOOD AND NUTRITION SERVICE, PROGRAM DATA: PARTICIPATION} at http://www.fns.usda.gov/pd/sllypart.htm (Feb. 27, 2002).

\textsuperscript{336} See id. (calculated based on provision that 13.0 out of 27.5 lunches served were free). About 9.4 percent, or 2,598,561.80, of lunches served were reduced price. \textit{Id.} (calculated based on provision that 2.6 out of 27.5 lunches served were reduced price lunches).

\textsuperscript{337} Dr. Robert Loube, \textit{Universal Service: How Much is Enough?}, Journal of Economic Issues, Vol. XXXCII, No. 2 (June 2003) at 5. Dr. Loube's estimate of the number of actual households that would be eligible under the NSLP model is based on “the number of children in the free and reduced meals program and the average size of a family with children receiving food stamps” (citing USDA 2002, table 1).

\textsuperscript{338} Dr. Loube has provided a cost estimate of the proposal contained in this article: The cost of reaching these families depends on assumptions regarding start-up period, amortization period, and whether the students will have individual Internet accounts or reach the Internet through a school server. An estimate of the costs of providing this service is $2.5 billion annually when using a four-year start-up period, $400 per family capital cost, and $10 per family usage charge. \textit{Id.}

affordable and accessible telephone service has also been provided to millions of households across the nation to serve the “public interest.” These combined government efforts have cost billions of dollars annually. It is now time to serve the purpose of the Communications Act of 1934, as amended, and the public interest, in a different manner. It is now incumbent upon us to ensure that low-income families have access to the customer premise equipment of the technology age and finally close the ever-widening digital divide.