Universal Access to Infrastructure and Information

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UNIVERSAL ACCESS TO INFRASTRUCTURE
AND INFORMATION

Allen S. Hammond, IV*

I. INTRODUCTION

Those who had any doubt about the likelihood of a Republican Congress and a Democratic President passing telecommunications legislation need only examine the recent pronouncements from Washington. Clearly, efforts to reshape the communications industry are in high gear. In response to the federal government and many state governments, we can expect companies to increase their earlier efforts to jockey for competitive position and new market entry by creating new applications for existing technologies, by creating new alliances and services, and by pressing for favorable market entry and competition policies.

The passage of national legislation to speed the building of the information superhighway is a critical point to assess how the legislation will address issues of economic development, employment, educational opportunity, electronic democracy and service delivery. For the individuals, citizens, and workers of America, tomorrow will be determined in significant measure by the quality of access to the means of

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2. A significant number of states have enacted or passed pro-competition legislation or policies that may be affected by the passage of the Telecommunications Act of 1996. For a representative sample of pro-competition efforts by state regulatory boards, see generally Phillip S. Cross, Telecommunications—Regulatory Update, PUB. UTIL. FORTNIGHTLY, Dec. 1995, at 46; Competition Cases Under Way in Many States in Wake of New Law, ST. TEL. REG. REP., Mar. 7, 1996; Eight States Take Steps on the Road to Local Competition, LOC. COMPETITION REP., Jan. 22, 1996; Local Competition Spreads in Ohio, Ill., Mich., Okla., Indiana, ST. TEL. REG. REP.; States Hope Telecom Act Will Foster Federal/State Cooperation, ST. TEL. REG. REP., Feb. 22, 1996.
communication and the ability to obtain information that is afforded to all today.

According to the politicians, regulators and captains of industry, there will be a cornucopia of new multimedia services for various businesses and residential consumers. Far more is at stake than the availability of more movies, sports or software-defined network capabilities with killer applications. As we reshape our communications system and the laws that govern it, we are also reshaping our democracy and ourselves.

There are many potential public benefits of multimedia convergence. They include increased economic competitiveness, enhanced delivery of education, the flowering of civic democracy, and enhanced medical service delivery. For instance, studies have identified

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In the age of mass media, citizens and grassroots groups need an equalizer. The combination of personal computers and the telephone network might prove as important to citizens in the information age as the printing press has been for several centuries. The use of electronic mail services, computer bulletin-board systems, and computer conference systems as channels to make decisions and disseminate information can help grassroots political organizations, nonprofit groups, and other public interest groups to gather critical information, organize political action, sway public opinion and guide policy-making.


7. See, e.g., *Bell Atlantic Helps Major Medical Group Establish First Teleradiology Network to Use PCs and Desktop Video; Teleradiology That Relies on ISDN and Off-the-Shelf Technology Will Provide More Efficient Service, Lower Costs and Increased Access to Specialists*, PR Newswire, Nov. 16, 1995, available in LEXIS, News Library, Curnws File (stating that hospitals and patients in Norfolk, Virginia are expected to “benefit from faster diagnosis and lower health care costs with a new interactive teleradiology network developed for one of the country’s largest radiology practices.”); Cohen, *supra* note 4, at 24-25 (discussing important benefits derived from implementation of advanced broadband communications in the health care industry); NYNEX
a significant economic multiplier effect that occurs as a result of a nation possessing an efficient telecommunications infrastructure. Researchers have documented impressive learning gains achieved through the use of interactive video and computer based instruction. In some cases, such instruction has been found to be thirty percent more effective than more traditional instructional formats. The use of electronic mail services, computer bulletin board systems, and computer conference systems as channels to make decisions and disseminate information can help grassroots political organizations, nonprofit groups, and other public interest groups to gather critical information, organize political action, sway public opinion, and guide policymaking. Radiology imaging services allow physicians at rural hospitals

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10. James Snider has written:

Most of the literature on the democratic significance of new information technology has focused on its ability to enhance direct participation by citizens in the political process. For the many people who have lost confidence in the ability of both elected representatives and the media to act in their interest, direct democracy, such as the ballot referendum or the town meeting, offers an appealing alternative.

Clearly, the new technology facilitates new forms of voting and thus direct participation. For example, instead of physically going to the polls, people could vote from their homes. With more-convenient and less-expensive voting, people could be expected to vote more frequently and on more issues. Ballot referendums and polls could proliferate.

Another benefit of the new technology is improved access to the deliberations of public bodies. Already, cable television's C-SPAN channel gives us coverage of the U.S. House and Senate chambers and many congressional hearings. Similarly, the California Channel provides coverage of the California House and Senate chambers and legislative hearings. At a local level, many public-access cable television channels cover city council and school board meetings. In the future, coverage of such meetings at local,
to quickly exchange x-rays and other medical images for consultation with radiologists at larger urban facilities.\textsuperscript{11}

So, as we revise our telecommunications infrastructure and access to the services and information that it can provide, we are revising what it means and what it takes to be an informed and responsible citizen, a well-educated individual, and a desired, competitive worker. In short, we are revising a part of the social compact under which participation in our democracy, society, and economy will be afforded and to whom full participation will be afforded.

While the litany of potential benefits grows ever larger and more impressive, there is another side to this rosy picture. Too often as an afterthought, an early apology, or an alarm, some limited attention is given to the potential impact of these national (and increasingly global) developments on inner city urban and rural communities.

There is growing concern that a significant portion of America's inner city and rural communities are in danger of becoming the domain of the "information have nots."\textsuperscript{12} The reasons for this concern can be summarized in four words: employment, education, infrastructure, and access. First, from an employment perspective, there is an absence in inner city urban and rural communities of a well-educated, learning-oriented work force capable of taking the high-technology jobs that the National Information Infrastructure (NII)-related industries are generating.\textsuperscript{13} Meanwhile, the low and unskilled jobs for

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state, and national levels is likely to expand dramatically, thus making government deliberations much more accessible to the average person.

New technology also facilitates previously impractical forms of democratic deliberation. With the electronic town meeting via television, computer, or some synthesis of both, citizens are offered direct contact with public officials, unmediated by journalists. The idea is to force politicians and the media to talk to the public about important issues that might otherwise escape the political agenda. Combined with televoting, the electronic town meeting offers a potentially significant improvement on the ballot referendum or traditional telephone poll, both of which are poor at fostering deliberation and thus lead to uninformed voting.


\textsuperscript{11} Rockwell, \textit{supra} note 7; Rhode, \textit{supra} note 5.


\textsuperscript{13} \textit{OFFICE OF TECHNOLOGY ASSESSMENT, THE TECHNOLOGICAL RESHAPING OF METROPOLITAN AMERICA} 19, 219-32 (1995). It is recognized that all American students will need access to advanced technology not only in preparation for the jobs that the information industry is developing but also to aid in the building of a nation of life-long learners. \textit{Educational Technology
which many in the inner city and rural populations are suited are dwindling rapidly. 14 Second, attempts to address this lack of preparedness with education are undermined by high student dropout rates and poorly staffed, underequipped and underfinanced schools, 15 as well as by the unequal spread of educational technology. 16 For a variety of reasons, there is also a decided absence of computer literacy in many inner city and rural communities. 17 Even

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14. See Ehrenhalt, supra note 13, at 42-45 (examining structural changes in the city's industrial sectors and identifying a trend toward a more advanced service economy).

15. For instance, New York City's economic future will be significantly shaped by success in providing opportunities for work experience to its young people. There are some key economic issues involving the city's youth. An economy with demands for increasing levels of educational attainment is hardly compatible with the 31-percent high school dropout rate . . . for the class of 1991. Dropouts do not have much of a role in today's economy, and that role is shrinking. . . . For youngsters, it means obsolescence before they enter the world of work. Dropouts start out with much lower labor force participation rates than do high school graduates, and that lag translates into substantially less labor market activity after their teenage years.

Id. at 48; see also Stanfield, supra note 13, at 2322 (noting the rising minority high school completion rates, but commenting that the rates still remain too low).

16. The least educated in our society are falling further behind. The gaps we have worked so hard to close are becoming wider. Intensifying this division is the explosion of new technologies. Those who have them and can use them have tremendous educational and career advantages over those who do not and can not.

Recognizing these problems, the President has launched a national mission to make all children technologically literate by the dawn of the 21st century, equipped with the technology, communication, math, science, and critical thinking skills essential to success in the Information Age.


17. Such reasons include disparities in wealth and education. For instance, a college graduate making $50,000 per year is ten times more likely to own a computer with a modem than a non-college graduate earning $30,000 per year. Hong, supra note 6, at 14. Despite the falling prices of personal computers, software and on-line services, they are still too expensive for many Americans. Shiver, supra note 12, at A7. Race is also a determining factor. Twelve percent of European Americans have a computer with a modem, as compared with five percent of African Americans, and eight percent of Hispanic Americans. Hong, supra note 6, at 14. The inability to ascertain the technology's relevance to one's daily life is also a factor. Shiver, supra note 12, at A18; see also Derek Ali, Edgemont Computer Needs Met, DAYTON DAILY NEWS, Sept. 13, 1995, at Z7-1 (pointing out the need for community computer centers in low-income areas to give residents opportunities to learn to operate computers and access the Internet). Furthermore, in
where computer technology is employed, there are often disparities in the manner in which it is used.\textsuperscript{18}

The telecommunications and electronic network infrastructure serving the residents of these communities is often older and less able to provide the newer services and functions that middle- and upper-class neighborhoods can take for granted.\textsuperscript{19} Moreover, the current evolution of telecommunications competition policies provides ample justification for the concern that significant portions of such communities will not be the first priority of telephone, competitive access providers or cable companies seeking to expand and/or upgrade infrastructure to garner, protect, or increase market share.\textsuperscript{20}

The electronic redlining,\textsuperscript{21} universal service,\textsuperscript{22} and cable "must-carry" controversies are three cases in point. Each is directly related to some rural communities, residents are hesitant to embrace change. Fred R. Bleakly, \textit{Rural County Balks at Joining Global Village}, \textit{Wall St. J.}, Jan. 4, 1996, at B1.

18. In poor inner city schools and schools with high percentages of multicultural students, for instance, students are less likely to receive assignments calling for hands-on or higher order thinking activities to help them think critically. Saul Rockman, \textit{In School or Out: Technology, Equity and the Future of Our Kids, Comm. of the ACM}, June 1995, at 26-27. Instead, they are more likely to receive computer instruction for isolated skill development or remediation (drill and practice), repeating applications of basic reading and math computation skills which are then assessed via standardized tests. \textit{Id.} at 27.

19. At least one local telephone company has acknowledged that it has had problems delivering quality service in some sections of New York State due to aging infrastructure. \textit{NYNEX Accepts Plan to Freeze Phone Rates}, \textit{Buff. News}, July 4, 1995, at 7B. "Because our country's aging telephone network is a patchwork of disparate local and regional mini-networks, [newer services such as] ISDN—Integrated Services Digital Network—has been slow in coming." David Butler, \textit{All-Digital Phone Network; Makes Its Way Across U.S., Columbus Dispatch}, Feb. 10, 1996, at 7H. Many cable networks are also old. As a result, many cable operators are "hop[ing] to use wireless [telephone network] profits to underwrite the modernization of their aging coaxial TV networks into modern fiber-optic systems." Steve Halvonik, \textit{Tune in, Log on, Dial up: Superhighway Divides}, \textit{Pitt. Post-Gazette}, Dec. 11, 1994, at B1.

20. "A number of groups have accused telecommunications companies, and others who are designing the systems, of formulating plans that will bypass many poor, remote or minority communities." Nathaniel Sheppard Jr., \textit{Internet in the Classroom; High-Tech Push Fights Electronic Redlining}, \textit{Chi. Trib.}, July 4, 1995, \S 1, at 1, 9. Many see economic reasons for bypassing such communities. \textit{See, e.g.}, Christopher R. Conte, \textit{Reaching for the Phone}, \textit{Governing}, July, 1995, at 32, 34-35 (observing that US West increasingly appears to be pursuing an urban strategy at the expense of rural areas); David Madrid, \textit{Internet Providers Bypass Rural Areas}, \textit{Tucson Citizen}, Mar. 29, 1996, at C15 (discussing the high cost of providing Internet services in sparsely populated areas).

21. Duane Stoltzfus, \textit{Bells Accused of Redlining; Video Dialtone at Issue}, \textit{The Record}, May 24, 1994, at C1 (citing a study by a coalition of consumer and civil rights groups finding that Bell Atlantic and other RBOCs are bypassing lower-income areas in their deployment of video dialtone networks).

22. One of the critical questions regarding the future definition of universal service concerns what basic services will be made available to all citizens. The alternatives range from basic analog telephone service, made available to as many citizens as is technically and economically possible to access, to advanced data streams, wireless services, and even full-motion video. For
to government efforts to formulate new competition policies that have in turn placed pressure on the subsidies that make it possible for the majority of American households to have access to a telephone and television for access to video information.\textsuperscript{23}

instance, the Alliance for Public Technology, a non-profit public interest group, suggests that universal service be defined:

To enhance economic development and participation by making available to all people in the United States at reasonable cost, a switched, broadband network that ensures full, reliable and secure two-way video, audio and data communication for each person, regardless of location or disability, and availability of appropriate public services and information locators.


Free, local over-the-air television broadcasting has served this nation for over half a century. This universal service reaches 98 percent of American households with news, information, sports and entertainment programming. Roughly 35 percent of the American public receive video information exclusively from free, local television. Local television stations are the only spectrum users to provide free video service to consumers.


The cable television industry currently has a multi-billion dollar fiber optic/coaxial cable broadband infrastructure that runs past 95\% of American households, and connects approximately 60\% of them to the network. This plant can carry more than 900 times the amount of information available over the copper wire used by the local telephone companies. At the same time, the local telephone companies, which provide telephone service to 94\% of homes, are upgrading their wires with coaxial cable and fiber optics so that they will be ready to provide full interactive video and information services as soon as the law permits them to do so.


The cable television, telephone and computer penetration rates for various ethnic groups, geographic areas and economic strata in the United States are not uniform. NTIA Study Sees Info Age "Have-Not" as Poor, Young, Uneducated, LOC. COMPETITION REP., Aug. 21, 1995.

According to the Commerce Department's National Telecommunications and Information Administration (NTIA) report entitled, Falling Through the Net: A Survey of the 'Have-Not' in Rural and Urban America, "[t]he most disadvantaged 'have-nots' of the Information Age are poor minority households in rural areas and central cities that are headed by a high school drop-out under the age of 25 . . . . Such households are the least likely to have both the telephone line and modem-equipped personal computer (PC), which are mandatory tools for accessing the nation's information infrastructure." Id. "[T]he most disadvantaged regions of the country in
II. Universal Service

According to many, increased competition in the local telephone service area is creating pressure to abolish, restructure, or spread the cost of subsidies that underwrite the provision of universal phone service to many inner city and rural residents. Title I, Section I of the Communications Act of 1934, sets forth the goal of American communications policy “to make available, so far as possible, to all people of the United States a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges.” In telephony, this policy evolved into the requirement that monopoly telephone companies provide service to as many people as possible. Telephone companies were allowed to subsidize the cost of serving poor, rural, or other less-profitable customers with higher margin clients such as downtown businesses. Even with this inclusive goal of universal service in place, there remain substantial terms of combined telephone and computer penetration are the rural South and the central cities of the Northeast and South.”

According to a market study by EDS Management Consulting Services on computer penetration patterns, “roughly one in six U.S. households has a modem-equipped PC, and that the most frequent activity of modem owners is accessing commercial online services.” The study also found that “[t]he highest computer penetration is among households with children under 17, headed by a college graduate under age 45 and earning more than $50,000 a year.”

24. Egan & Wildman, supra note 3, at 42; Predictable Camps; Telephone Industry Debates Universal Service in NTIA Filings, COMM. DAILY, Dec. 20, 1994, at 3; Universal Service Concept to Get Information-Age Update, WASH. TELECOM NEWS, Feb. 7, 1994; see also Catherine Arnst & Kevin Kelley, Phone Frenzy: Is There Anyone Who Doesn’t Want to Be a Telecom Player?, BUS. Wk., Feb. 20, 1995, at 92 (explaining that long-distance carriers’ entry into local service is motivated in part by the opportunity to reduce access fees paid to local telephone companies).


26. The Communications Act of 1934 states a goal “to make available, so far as possible, to all the people of the United States a rapid, efficient, nationwide ... wire and radio communication service with adequate facilities at reasonable charges.” This goal has come to be known as universal service, and [the National Telephone Cooperative Association] NTCA and its members have supported it since the beginning.


27. In a noncompetitive telephone service environment, the universal service pricing model served to subsidize rural and low-income residential prices through higher urban business prices. Richard Taylor, Leveling the Field in Telecommunications, ST. LOUIS POST-DISPATCH, Feb. 21, 1995, at 11B.

Now, however, “[c]ompetition is undermining an intricate web of subsidies designed to make telephone service widely available. In particular, it’s putting downward pressure on long-distance, business and urban telephone rates, all of which traditionally have been overpriced to help pay the freight for local, residential and rural telephone users.” Conte, supra note 20, at 32; see also Mike Mills, Increases in Local Phone Rates Proposed, RECORD, May 7, 1996, at A1 (reporting that “certain phone services are deliberately overpriced in order to generate about $18 billion a year in subsidies to local phone companies”).
gaps in service.\textsuperscript{28} Roughly twenty-five percent of low income families lack phone service.\textsuperscript{29} Pay phones, the traditional substitute for a household phone, are becoming less and less accessible.\textsuperscript{30} To combat drug dealing, pay phones have been removed from many poor neighborhoods or restricted to outbound calls only and are being returned to rotary dialing to discourage illicit access to computerized systems.\textsuperscript{31}

\textsuperscript{28} For example, 

\textit{[i]n July 1994, the national telephone penetration rate was almost 94 percent of U.S. households. Although this percentage gives the appearance of universal service coverage, in fact there are 21 states at or below the average penetration rate. There are still 6.2 million homes without telephone service. Thus, universal service is not yet nationwide. Weikle, supra note 26, at 50.}

\textsuperscript{29} According to a 1993 study, in some poor neighborhoods of New York City, as many as 25\% of households lack phones. Alan Finder, \textit{Phone Scarcity Complicates Fire Alarm Plan}, \textit{N.Y. Times}, Feb. 11, 1996, at 49, 54. In a recent study of inner city Camden, New Jersey, a Rutgers University communications professor found that 25\% of households did not have a telephone. Shiver, supra note 12, at A7.

Even basic telephone service is out of reach for many households. “Research by Rutgers University shows that about six million U.S. homes have no direct access to a telephone, including 50 percent of households headed by single women with children who are at or below the poverty level and 21 percent of those living in public housing.” Barbara Ruben, \textit{Access Denied}, \textit{Envtl. Action}, Fall 1995, at 18.

\textsuperscript{30} “In many parts of [Chicago’s] low-income areas, one in five homes do not have a phone and rely on a pay phone as their lifeline to the outside world, and . . . ‘About one in four of the 911 calls that are generated come from pay phones.’” Mary A. Johnson & Fran Spielman, \textit{Daley: Ban Pay Phones From Private Property}, \textit{Chi. Sun-Times}, July 13, 1994, at 4 (quoting Steve Ford, director of external relations for Ameritech Pay Phone Services). According to the 1990 Census for Chicago, “1.8 percent of single-family homes and 12.1 percent of renters do not have telephones.” Id. Significantly, the absence of working pay phones can undermine fire protection in the absence of local alarm boxes. “[A] survey by \textit{The New York Times}, covering more than 450 public telephones in 15 [New York] City neighborhoods from Jan. 23 to Feb. 2, [1996] found that nearly one-third were broken.” Finder, supra note 29, at 49. For example, 

[a]long a 16-block length of Blake Avenue in East New York, Brooklyn—a neighborhood where, as in many other poor areas, some residents do not have home phones—only two public phones were in place, both working. On a corner at every other block, however, a red fire-alarm box stood—deactivated last fall as part of a Fire Department experiment to test the effects of removing the alarms. 

\textit{Id.} at 54. Because there are an insufficient number of phones on the street in some New York City neighborhoods, residents have no way to let fire departments know if there is a fire. \textit{Id.} at 49.

\textsuperscript{31} In Chicago, a recent proposal to regulate, and in some instances prohibit, the placement of pay phones on private property is an attempt “to fight drug traffic and street crime by banning some of the tools of the trade.” Robert Davis, \textit{New Stab at Lifeline of Dealers; Pay Phones Face 2nd Daley Attack}, \textit{Chi. Trib.}, July 13, 1994, § 2, at 1, 7. The vehemence of the city’s efforts caused the local exchange carrier to state:

“We share the city’s interest to confront the drug problem, but moving all of our phones into the public way is not in the best interests of our customers, nor city residents. In some parts of Chicago, one in five residences do not have a home phone.”

. . . .

“. . . [W]e’ve removed about 500 of our outdoor phones and we’ve restricted the uses on almost half of them . . . .”
Without access to telephones, poor people lose opportunities to acquire government benefits, secure employment, and obtain emergency care and other essentials such as connection to society at large.  

Now, as competition increases in local telephone markets, substantial pressure is being generated to undo or substantially revise the universal service subsidy structure. As discussed above, a good portion of the underwriting of basic service takes the form of subsidies. There are direct subsidies that help telephone companies with higher-than-average costs. These companies operate in rural areas where telephone lines must be strung for many miles to reach few subscrib-

Id. (quoting Steve Ford, director of external relations for Ameritech Pay Phone Services).

In recent years, shoulder surfers have stolen calling code numbers at pay phones and cloners have ripped off cellular phone codes.

Now, a low-tech form of telephone fraud called bridge tapping has flourished with the boom in discount phone-calling parlors, where people pay cash to make long distance calls at prices usually lower than those at pay or home phones. Bridge tappers usurp phone lines for huge calling sprees.

...  

Bridge taps are as simple as putting in a wire and two clips. They can be made to look like innocent mistakes by NYNEX technicians, and they don't often leave marks when they're removed.

Michael Moss, Press “R” for Rip-Off; Calling Sprees; Crooks Hack into Phone Lines, Call Around World, NEWSDAY, Mar. 19, 1995, at A5.

32. In a recently published study identifying obstacles (other than lack of insurance) that predict the lack of a regular medical provider and delays in seeking medical care for patients at an urban public hospital, 20% of respondents cited the absence of phone service. Kimberly J. Rask et al., Obstacles Predicting Lack of a Regular Provider and Delays in Seeking Care for Patients at an Urban Public Hospital, 271 JAMA 1931, 1932 (1994). For example, “‘[m]any people in public housing [who responded to the survey said that they] don’t want to go to a pay phone on the corner because it's simply too dangerous, ... so they will wait until morning, ... So they hope their problem gets better, or goes away.” Bill Hendrick, Coverage Is No Panacea for the Poor, ATLANTA J. & CONST., June 22, 1994, at A7 (quoting Emory University's Kimberly J. Rask, lead author of the survey).


34. “Local competition makes the inevitable adjustment in the nature of universal service more complicated, because there will no longer be one provider to subsidize whatever is deemed the proper level of universal service. Rather, the LEC will be under competitive and regulatory pressure to charge ‘cost-based’ prices that eliminate the basis for internal subsidies.” ROBERT M. ENTMAN, COMPETITION AT THE LOCAL LOOP: POLICIES AND IMPLICATIONS 9 (Aspen Institute 1993).

35. New Study Says Target, Don’t Expand, Universal Service Subsidies, ST. TEL. REG. REP., Jan. 26, 1995. “Direct subsidies include the Universal Service Fund and National Exchange Carriers Association funds, as well as low-interest loans from the Rural Electrification Administration and the Rural Telephone Bank.” Id. The USF and NECA funds pool money from access charges imposed on long-distance companies, while low-interest loans are financed by federal taxes. Id.
There are also cross-subsidies in which one group of users pays higher prices to underwrite lower prices for other groups. These include business-to-residential customers, urban-to-rural subscribers, and long-distance-to-local callers.

Competition and changing regulatory attitudes are challenging the subsidy structure. For instance, long-distance telephone companies are seeking a reduction in access charges, which comprise approximately forty to forty-five percent of the cost of long-distance charges. Their efforts to reduce costs include creating bypass arrangements and entering the local market as competitors. Meanwhile, long-distance companies are joined by Competitive Access Providers (CAPs), who compete for the high-end users who comprise a small number of actual customers, but generate the vast majority of revenues. Finally, consumers want to reap the benefit of any reduc-

36. Id.; see Weikle, supra note 26, at 53 (observing that rural telephone companies generally have higher-than-average costs due to long distances between homes which leads to more plant in use).
37. Id.
38. Id.
40. Bray, supra note 39, at 32; FCC May Allow Baby Bells to Cut Access Rates, supra note 39, at 10D.
41. "[T]he local exchange business offers real opportunities for new entrants. High rates for business telephone service, traditional pricing approaches, and the cost structure of the local service business will allow challengers to pick off the LECs' profitable customers." Michael Arellano, Exploiting the LECs' Achilles' Heel, TELECOM STRATEGY LETTER, July, 1995, at 81.

Dividing subscribers into three groups of 50 million access lines each, average monthly revenue is $36 for the lower segment, $45 for the middle segment, and $72 for the upper segment; the overall average is $51 per month. There are about 100 million residential lines and 50 million business lines. Most business lines fall into the upper segment (because of higher basic charges for business lines and higher usage), while the majority of residential lines fall into the lower two segments. High revenue lines are much more profitable than low revenue lines; the upper segment brings in more access and intraLATA toll revenues, which are high-margin businesses for the LECs. Northern Business Information estimates that, holding all other factors constant, average monthly profit is $11 in the upper segment and $2 in the middle segment; in the lower segment, each access line leads to a loss of $4 per month, on average. Potential entrants understand these relationships, and will go after the LECs' high-margin subscribers: business customers and high-usage residential subscribers.

tions in cost of service due to increased network efficiencies, but do not want to subsidize local telephone company entry into competitive cable and information services.\textsuperscript{42} Thus, revenues for competitive entry or introduction of competitive services must come from local exchange carrier (LEC) profits garnered via the provision of competitive services and from shareholders. The net result is pressure on whatever subsidies exist to fund universal service.\textsuperscript{43}

III. Cable Must-Carry Rules

In broadcasting, the policy favoring universal access to information was manifest in an allocation scheme that sought to make advertiser- and government-supported broadcast service accessible to the vast majority of Americans.\textsuperscript{44} Competition and innovation in the broadcast and cable markets, however, are creating a shift from advertiser-supported to subscription-supported delivery of video information.\textsuperscript{45} This shift prompted congressional action to protect the information access of approximately forty percent of the American public by enacting the "cable must-carry laws," which require cable operators to carry a number of commercial and public broadcast stations operating in the operator's franchise area.\textsuperscript{46}

In \textit{Turner Broadcasting System, Inc. v. FCC}, the Supreme Court recently held that the government had an important interest in assuring that forty percent of the country retained access to "free" broadcast information.\textsuperscript{47} However, the case was remanded to determine

\begin{itemize}
\item \textsuperscript{42} It has been argued that consumers of traditional telephone services should not have to finance the new or innovative services and infrastructure to be offered unless they actually use them. Egan & Wildman, \textit{supra} note 3, at 40. With this goal in mind, regulators have sought to protect consumers from footing the bill for new competitive entry. See, e.g., \textit{Sparing Consumers Harm Core Competition Issue For Regulators}, \textit{ST. TEL. REG. REP.}, Aug. 10, 1995. There is growing skepticism that competition in the local loop will result in lower prices for consumers. See, e.g., Mills, \textit{supra} note 27, at A1.
\item \textsuperscript{43} \textit{See Communications Infrastructure Hearings, supra} note 33, at 234-39 (describing the risk competition poses to universal service).
\item \textsuperscript{44} \textit{See Statement of Kevin O'Brien, supra} note 23 (discussing universal access).
\item \textsuperscript{45} \textit{See Edwin L. Artzt, P&G's Artzt: TV Advertising in Danger; Remedy Is to Embrace Technology and Return to Program Ownership, ADVERTISING AGE, May 23, 1994, at 24, 40} ("There is a very real possibility that the majority of programs people watch will not be advertiser-supported.").
\item \textsuperscript{46} \textit{See Turner Broadcasting Sys., Inc. v. FCC, 114 S. Ct. 2445, 2453 (1994)}. Specifically, 47 U.S.C. § 534(b)(1)(B) requires cable systems with more than twelve active channels to set aside up to one-third of their channel capacities for commercial broadcasters that request carriage, § 534(b)(1)(A) requires cable systems with more than three hundred subscribers but twelve or fewer active channels to carry signals of three commercial broadcasters, and § 535(a) requires carriage of local public broadcast television stations. \textit{Id.}
\item \textsuperscript{47} \textit{Id.} at 2469. The government's affirmative interest in assuring public access was recently upheld in the \textit{Turner Broadcasting} decision. In response to the cable operators' argument that
whether the viability of broadcast television was actually threatened by the competitive bottleneck that cable television has essentially become. Given the historic inability of broadcasters to establish economic harm from competitors, there is good reason to believe that the must-carry rules may not survive a second trip to the Supreme Court.\footnote{See Allen S. Hammond, Regulating the Multi-Media Chimera: Electronic Speech Rights in the United States, 21 RUTGERS. COMP. & TECH. L.J. 1, 64-66 nn.184-85 (1995) (arguing that, upon remand of Turner, evidence of economic harm may prove insufficient to establish a current threat to the government's interest in the retention of viable broadcast stations). Hammond further contends that even if the arguments of economic harm were compelling, the government has less intrusive alternative means available to assure the continued viability of over-the-air broadcasting. \textit{Id.} at 70-71.}

the government had engaged in an unconstitutional selection of broadcasters over cable operators based on broadcasters' speech, the \textit{Turner Broadcasting} majority stated:

Congress designed the must-carry provisions not to promote speech of a particular content, but to prevent cable operators from exploiting their economic power to the detriment of broadcasters, and thereby to ensure that all Americans, especially those unable to subscribe to cable, have access to free television programming—whatever its content. \textit{Id.} at 2462.

Thus, for now, the government may affirmatively protect public access to information by assuring broadcaster access to cable networks. But, the number of households subscribing to cable has increased from 60 to 66\% since the \textit{Turner Broadcasting} decision. As video information shifts to subscriber based rather than advertiser based funding, the question of how the remaining American households will acquire access to electronic information remains to be answered.

48. See Allen S. Hammond, Regulating the Multi-Media Chimera: Electronic Speech Rights in the United States, 21 RUTGERS. COMP. & TECH. L.J. 1, 64-66 nn.184-85 (1995) (arguing that, upon remand of Turner, evidence of economic harm may prove insufficient to establish a current threat to the government's interest in the retention of viable broadcast stations). Hammond further contends that even if the arguments of economic harm were compelling, the government has less intrusive alternative means available to assure the continued viability of over-the-air broadcasting. \textit{Id.} at 70-71.

In addition, while a majority of the Supreme Court concluded the must-carry rules are content-neutral and the government's interests are compelling, a new majority of the Supreme Court still could conclude otherwise given the recent change in the Court's composition. Notably, the dissent concluded that Congress rested a significant portion of the justification for the must-carry rules on its desire to assure the continued provision of local news and public affairs as well as educational programming by broadcasters. \textit{Id.} at 62-64 nn.181-82. Should the new sitting justice come to the same conclusion when and if the case comes before the Court again, a new majority could hold that Congress's reasons for adopting the must-carry rules rest in part on the content of broadcasters' speech and therefore, are impermissible. \textit{Id.}

On remand from the Supreme Court, a three-judge district court again upheld the must-carry provisions, and granted summary judgment to the government. \textit{Turner Broadcasting}, 910 F. Supp. 734 (D.D.C. 1995). The district court majority elected to focus on the economic state of affairs between broadcasting and cable that were apparent to Congress at the time the law was passed. \textit{Id.} at 740-45; David J. Goldstone, \textit{Free Speech and Cable Regulations Face the Information Age}, AM. L., May 1996, at 22, 26. It concluded that the must-carry rules were constitutional and that the evidence before Congress in 1992 was sufficient to support a Congressional prediction that broadcasting was in economic danger. \textit{Turner Broadcasting}, 910 F. Supp. at 751. Nevertheless, one member of the majority also stated: "[A] reasonable trier-of-fact could return a verdict for either party, depending upon whose evidence best survived the adversarial process." \textit{Id.} at 754 (Jackson, J., concurring); see also Frank W. Lloyd et al., \textit{Must-Carry Rules Barely Survive}, N.Y.L.J., Jan. 5, 1996, at 5 (discussing the district court's decision).

In addition, those who rely on subsidized access to information provided by public libraries may soon find their access diminished as telecommunications firms and on-line providers supply subscription-based alternatives to oftentimes limited library holdings.49

In the subsequent oral argument before the U.S. Supreme Court, Chief Justice William Rehnquist, Justice David Souter and Justice Anthony Kennedy, who voted to retain the must-carry rules subject to a remand to secure a better factual record, expressed serious reservations about whether the government's interest in assuring that the non-cable subscribers had access to broadcast programming was actually threatened by cable competition. Linda Greenhouse, Justices Skeptically Review Law on Cable System Access, N.Y TIMES, Oct. 8, 1996, at A10. In addition, Justice Breyer, who replaced Justice Blackmun (also a member of the last Turner Broadcasting majority), questioned whether cable competition was a credible threat to broadcast stations sufficient to justify the continuation of the must-carry rules. Id. The fifth Justice previously voting for retention, Justice John Paul Stevens, queried whether the government's argument that broadcast program quality was threatened by cable competition constituted an acknowledgement that the government used the must-carry rules as a form of content regulation. Supreme Court Justices Press for Evidence of Harm from Lack of Must-Carry, PUB. BROADCASTING REP., Oct. 18, 1996; see also Tony Mauro, Bearding the Justice, CONN. L. TRIB., Oct. 21, 1996, at 12 (reviewing the oral argument). Although queries by Justices during oral argument are not necessarily indicative of how they may rule, the questioning may indicate that there is a significant possibility a majority of the Court may hold that the must-carry rules are unconstitutional.

Moreover, some Court observers have argued that the recent replacement of Justice Harry Blackmun, a member of the 1994 Turner Broadcasting majority, with Justice Stephen Breyer, who has historically been skeptical of government regulation, may not bode well for the continuance of the rules. Kirk Victor, Cable Conundrum, NAT'L J., Mar. 9, 1996, at 564. Others suggest that Justice Souter may have required the remand for evidentiary findings as the price for his vote with the 1994 Turner Broadcasting majority. Id. If these surmises are correct, given the thrust of oral argument questioning, the failure of the government to provide further evidence of harm may prove decisive and the must-carry rules may yet be declared unconstitutional.

In such an event, the recent order issued by the Federal Communications Commission, which confirmed that LECs providing open video services will have essentially the same must-carry access rules as cable operators, will be rendered unenforceable. FCC Limits Cable Switches to OVS but Requires LECs to Meet Other Cable Rules, COMM. DAILY, June 4, 1996.

49. Those in the public who enjoy subsidized access to information from traditional institutions such as libraries may find their access diminished as a result of recent technological developments. For example,

[direct personal access connections to fee-based commercial information-delivery services can be seen as a threat to the library's mediating role in providing access to information resources. Libraries are organized and structured to expend resources on acquiring materials and delivering services; they are not well equipped to support fiscal and administrative operations, which require processing and accounting for service payments. In this respect, libraries are unlike the national and regional telecommunications companies, which have transaction-based accounting systems that are required to bill customers by category for a wide variety of services, some of which are time-sensitive.

IV. Electronic Redlining

Recently, a coalition of consumer and civil rights groups alleged that several regional telephone companies were bypassing low-income and minority communities in the early stages of building new video dialtone networks.50 These networks would allow the companies' traditional phone customers to order movies, television shows, sportscasts, and other programming from computer databases that would operate like giant electronic video stores. Because these video dialtone networks could become the primary communications system for millions of Americans, it is argued that they must be made available in an equitable and nondiscriminatory manner.51 Many believe that without adequate safeguards, state pro-competition policies will actually encourage redlining.52

50. The groups contend that, based on their research into applications filed with the FCC for video dialtone services, the RHCs [Regional Holding Companies] are "designing their advanced communications systems to bypass many low-income and minority communities."

In each case, the groups claim that the RHCs have targeted their services at affluent communities and are choosing not to provide service to less affluent areas.

In some cases, this process excludes entire jurisdictions. The groups cite Bell Atlantic's application for the Washington, D.C., area which actually excludes the district itself and Prince Georges County, Md., while targeting wealthier Montgomery County, Md., and the Northern Virginia suburbs.

In other instances, RHCs have chosen not to serve selected portions of a jurisdiction. According to an example from one of the petitions, "The map of US West's scheduled deployment in Denver depicts a large slice running through the center of the city where video dialtone facilities will not be initially constructed. Lower income and/or minority persons are heavily concentrated in the excluded area."

Groups Petition FCC For Prohibition of "Electronic Redlining" By RHCs, ADVANCED INTELLIGENT NETWORK NEWS, June 1, 1994 (quoting a petition filed with the FCC by a coalition of five civil rights and consumer advocacy groups).

51. In response, the telcos argue that communities where the companies intend to put video dialtone on the fast track, will include low-income and minority communities. Stoltzfus, supra note 23, at C1. The FCC has indicated that it will review the petitions in connection with the respective pending applications. Id. It has indicated that its goal is "to ensure that all Americans have video dialtone service regardless of where they live or their economic status." Id. (quoting Donna Lampert, a senior policy advisor with the FCC).

52. The PUC... is planning to jump-start local telecommunications competition in California without assuring that universal service will be part of the package. The panel's actions could lead to redlining—stifling the development of information services for certain citizens based on where they live.

Redlining could occur if we don't first clarify what obligations must be established to assure universal service, because it's only logical that telecommunications investors will rush to the most profitable areas, leaving out residents in less desirable inner-city and rural places.

Under the recently enacted legislation, video dialtone networks are called open video systems, and the telephone companies expected to provide them are given greater latitude in entering the video distribution market.\(^5\) Regardless of their name, the short-term economics are unlikely to change—systems will first be built in communities perceived to possess the requisite dollars and demand.\(^5\) Many inner city and rural communities, as well as near suburbs,\(^5\) are not viewed as

\(^{53}\) Open Video Rules Watched Closely; Telcos Hail OVS as Successor to Burdensome Video Dialtone, INTERACTIVE VIDEO NEWS, Apr. 15, 1996; see Chris McConnell, Open Video Systems Open to Debate, BROADCASTING \\ & CABLE, Apr. 8, 1996, at 18 (reporting that the open video system model allows telephone companies to deliver video without incurring common carrier regulations).

Pursuant to § 651 of the Telecommunications Act of 1996, telephone companies have four options for entering and competing in the video programming business: (1) radio communication under Title III; (2) common carriage under Title II; (3) cable network under Title VI; or (4) if they are local exchange carriers, by means of an “open video system” under section 653. \(^{47}\) U.S.C.A § 651(a)(1)-(4).

Section 653(c) requires that the must-carry provisions of Title VI, governing cable franchisees, be applied to open video systems. \(\text{Id.} \) § 653(c). Thus an open video system will be required to carry local public and commercial broadcasting stations unless the commercial stations require retransmission consent. \(47\) U.S.C. §§ 534-35; see also Monroe E. Price, Open Video Systems and the Telecommunications Act, N.Y.L.J., Aug. 27, 1996, at 1 (discussing open video systems).

\(^{54}\) As one commentator noted:

Let's be realistic: Under local-loop competition, every carrier is not going to be benevolent and provide for those that cannot afford to pay for service. Competitors will go after the best parts of the market and not care about marginal areas. Access to all network services may not be totally ubiquitous; there could be a gap in the range of services from one market to another.


Another commentator similarly argues that poor communities will be bypassed:

[\text{C}onsumer and civil rights groups have charged that access to computer communications is bypassing poor communities, worsening an already growing economic and racial polarization.]

Sniffing vast market potential, U.S. businesses of all sizes have stampeded onto the Internet. Major computer and financial firms are jockeying to establish standards for electronic funds transfer. As advertising begins to appear on the Internet, critics fear that the network is transmuting from a space for the free exchange of ideas into a vast electronic shopping mall.

The Fortune 500, jockeying to dominate Internet access, is beginning to intrude into content as well . . . .

. . . [B]y the time the information-poor of the world get connected, . . . “they may find that the Internet is a wholly owned subsidiary of the News Corporation or Time Warner, at which point it may be a lot less useful for whatever purposes they want to put it to.”


\(^{55}\) “Technological change is likely to continue to impact urban cores by letting more of the economy be operated at a distance; it threatens the economic well being of many central and
desirable markets regardless of their actual consumption of telecom and video services. When the marketplace does not work to distribute goods and services equitably, we call it a market failure.

V. Telecommunications Act of 1996

As you can see, for many communities and individuals across this nation, the passage of national legislation to speed the building of the information superhighway is a critical point at which to assess how the legislation will address issues of economic development, employment and educational opportunity, and electronic democracy and service delivery.

How does the legislation address the service and information access questions raised above? As the federal government unleashes competition, it has provided for the protection of universal access. For this, the Congress, the President, and all those people of good will who fought for such provisions are to be commended.

A. Universal Service

Pursuant to the new law, the development and implementation of universal service is to be governed by a set of guiding principles that articulate a general policy of equitable distribution of reasonably priced, affordable, quality services. The FCC is tasked with assuring

inner cities, and older suburbs of metropolitan areas.” Office of Technology Assessment, supra note 13, at 8. Areas suffering from high costs, declining services, crime and an unskilled workforce will find themselves bypassed as communication technologies allow jobs to follow skilled workers and firms to relocate to lower cost areas with higher qualities of life. Id.


57. The enumerated universal service principles of § 254(b) are as follows:

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 avail-
that the rates charged consumers are just, reasonable and affordable.\textsuperscript{58} Those Americans who are deemed poor by established criteria are to be protected from a loss of service as well.\textsuperscript{59} The FCC must promulgate and implement regulatory policies that assure communities, schools, libraries, and health care facilities access to telecommunications services and advanced telecommunications services.\textsuperscript{60} These services are to be provided to schools, libraries, and health care facilities at a still to be determined discount.\textsuperscript{61}

Section 254 does not define "universal service." Instead, it requires the FCC, in conjunction with representatives of state regulatory bodies, to create a joint board charged with making recommendations to the FCC regarding a definition of universal service.\textsuperscript{62} In addition, the FCC must consider the Joint Board's recommendations and promulgate final rules regarding the definition and implementation of a universal service policy within fifteen months of the legislation's enactment.\textsuperscript{63} The FCC must respond to subsequent Joint Board recommendations within one year after receipt and must review the progress of the implementation of universal service within five years of the policy's implementation.\textsuperscript{64}

\begin{footnotes}
\item[58] Id. § 254(i).
\item[59] Id. § 254(j).
\item[60] Id. § 254(b)(6), (c)(3), (h)(1)(B).
\item[61] Id. § 254(h)(1)(B).
\item[62] Id. § 254(a)(1)-(2).
\item[63] Id. § 254(a)(2).
\item[64] Id.
\end{footnotes}
In formulating the national policy of equitable access, the Joint Board and the FCC must employ seven guiding principles. Several principles critical to the preservation and advancement of universal service include requiring that telecommunications service providers make an equitable and nondiscriminatory contribution to universal service, directing that federal and state mechanisms for funding and implementing universal service be specific, predictable and sufficient to preserve and advance universal service, and ensuring that elementary and secondary schools and classrooms, health care providers, and libraries have access to advanced telecommunications services.

Furthermore, the FCC and the Joint Board are given the flexibility to establish additional principles as they determine what is necessary and appropriate for the protection of the public interest, convenience, and necessity consistent with the Telecommunications Act. Should the service roll-out be deemed too slow or inequitable, the FCC may stimulate faster deployment of services, provided that the Commission does so by facilitating more competition.

In addition to designating schools as special recipients of universal access, the law establishes the National Education Technology Funding Corp. to provide loans and grants to educational institutions and libraries to fund access to telecommunications networks and technol-

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65. Id. § 254(b)(1)-(7); see supra note 57 (enumerating the universal service principles)
66. Id. § 254(b)(4). Under § 254(k) of the Act, the Commission (with respect to interstate services) and the States (with respect to intrastate services) are required, if necessary, to establish cost allocation rules, accounting safeguards, and guidelines to ensure that services included in the definition of universal service bear no more than a reasonable share of the joint and common costs of facilities used to provide those services.
67. Id. § 254(5).
68. Id. § 254(b)(6).
69. Id. § 254(b)(7). Changes to the definition of universal service may be made based upon a recognition of the evolving nature of telecommunications services consistent with: advances in telecommunications and information technologies and services; a recognition that telecommunications and information technologies and services are essential to education, public health, or public safety; the operation of market choices by customers such that the additional services have been subscribed to by a substantial majority of residential customers; the extent to which additional services are being deployed in public telecommunications networks by telecommunications carriers; and the extent to which such services are consistent with the public interest, convenience, and necessity. Id. § 254(c)(1)(A)-(D).
70. Of course, if market failure is the problem, due to misperceptions or accurate perceptions of a market segment's desirability, more competition is not likely to be the solution.
71. Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56, 157-60 § 708 (1996). Under Section 708(a)(C), the National Education Technology Funding Corp. is required, inter alia, to leverage resources and stimulate private investment in education technology infrastructure, encourage states to create, maintain, utilize and upgrade interactive high capacity networks capable of providing audio, visual and data communications for elementary schools, secondary schools and public libraries, and upgrade the delivery and development of learning through innovative technology-based instructional tools and applications. Id.
ogy-based educational tools and innovations. However, anyone watching the budgetary wars in Congress and the state legislatures knows that the pool of education dollars is likely to shrink, rather than grow, relative to need. Under such circumstances, the provision's effectiveness will be qualified by future allocation decisions, agency budgetary considerations, and the priorities and efficiencies with which state bureaucracies distribute the federal largesse.

The new law does not tell us what universal service and access are now, who is eligible to receive it, or how much it will cost. These very hard questions are left to the states, the Joint Board, and the FCC.


Despite voting to "largely restore unprecedented cuts in education, training and children's programs that were previously passed by the Congress," some $400 million in cuts remain in the Fiscal Year 1997 Budget. NEA Statement on Final Agreement For FY'96 Education Budget, U.S. Newswire, Apr. 25, 1996, available in LEXIS, News Library, Curnws File. The recently rejected cuts would have resulted in dropping one million children from Title I programs designed to provide them with basic skills of reading, writing and mathematics, wiping out the jobs of 50,000 Title I teachers and teaching aides around the country; reducing funding for the Safe and Drug-Free Schools program, which serves more than 39 million youngsters, and decreasing funds for the Pell Grant program, which provides low- and middle-income students the opportunity to gain a college education. Id.; see Robert Polner, Cutting Where It Hurts: Federal Aid Slashed for City Schools, Newsday, Feb. 2, 1996, at A3 (reporting the expected effects of proposed fiscal year 1997 federal budget cuts on the New York City schools).

Similar budgetary austerity plagues states and municipalities. See Rick Green & Robert A. Frahm, In Search of Solutions for Troubled Schools; Preschool Programs Needed Experts Say; The Problem Is Money, Hartford Courant, May 22, 1996, at A1 (reporting that in 1995 and 1996 Connecticut lawmakers "passed laws to develop preschool programs but did not allocate the needed money"); Howard Libit, Education Budget Faces Deep Cuts, Howard May Not Meet State Requirement for Per-Pupil Spending, Balt. Sun, Feb. 9, 1996, at B1 (speculating that county government would fail to approve funding necessary to meet state requirements, which would free the school system to cut $10 million from its proposed operating budget); Robert Polner, Special-Ed Cuts Draw Fire; Plan Would Jack Up Class Sizes, Newsday, May 21, 1996, at A3 (reporting that the New York Board of Education is seeking state approval to increase class sizes for mentally and physically impaired students to cut costs for the second consecutive year); Michael Slackman, A Hard-Hitting Silver/Speaker Hopes to Corner Pataki on Education, Newsday, May 7, 1996, at A18 (reporting a state legislator's criticism of Governor Pataki's proposed education funding cuts and calling for restoration of $640 million to fund public elementary and secondary schools, and the State's university system). In light of the above mentioned budgetary constraints, it is appropriate to question the probability of success attending efforts to equitably fund access to educational technologies. See Thomas J. Wall, NIH Milepost: The 1995 Infobahn Progress Report, Tech. & Learning, May-June 1995, at 52, 56 (pointing out that federal funds earmarked for investment in educational technologies may be jeopardized by deficit reduction plans).
But, even as these government entities begin to answer the technology access question, they are not answering the question of how to assure continued access to information in an era of increasing cost.

The cost of access to information (programming) is increasing as equipment necessary for reception shifts from a television set alone to a television set, a set top converter (cable) and a computer, even as access to the information increasingly requires a monthly fee and possibly a per minute charge. As subsidy mechanisms such as advertiser-supported broadcast programming are replaced by subscription-based cable and computer-accessed programming, access to technology alone will not ensure that there is valuable programming available at reasonable rates.

B. Must Carry

Aside from the application of must-carry rules to open video systems, the Act did not address must carry. As a result, Congress lost its last opportunity to buttress its findings of the harm to broadcast station viability caused by cable competition. Because Congress did not amend its findings, and because the federal government apparently has not provided new evidence during the recent oral re-argument before the Supreme Court, the must-carry rules appear to be at risk. Should they be declared unconstitutional, the roughly forty percent of the American public relying on access to advertiser-subsidized broadcast information, ultimately may be forced to pay for access or settle for inferior programming.

C. Electronic Redlining

Despite early efforts to include specific language prohibiting the electronic redlining of poor and minority communities in earlier drafts of legislation, the new legislation does not address electronic redlining.

73. First, cyberspeech is expensive, both in terms of initial outlay for hardware and recurring on-line charges. For millions of Americans, this is no small obstacle, especially when one considers the additional cost of minimal computer literacy. While it is true that speech becomes cheaper once you’ve gained access to cyberspace—sending a message to 1,000 people costs little more than sending it to one—the initial threshold cost of this entry remains prohibitively high; the specter of information haves and have-nots is already upon us. This problem might be alleviated somewhat through subsidized access to cyberspace via public computer terminals (which have been established with success in Santa Monica and other cities), lower connection costs for low-income users (as with telephone service) and even something as idiosyncratic as Speaker Gingrich’s tax breaks for laptops. Andrew L. Shapiro, Street Corners in Cyberspace, NATION, July 3, 1995, at 10, 11-12.

74. While the merger of the television, the telephone and the computer into the “telecomputer” is anticipated, it has not arrived at affordable prices for the vast majority of Americans, nor is it a fait accompli.
by name. Instead, the redlining issue is addressed as part of the amendment to Section 151 of the Communications Act of 1934, which now states in pertinent part: "to make available, so far as possible, to all people of the United States without discrimination on the basis of race, color, religion, national origin, or sex, a rapid, efficient, nationwide and world-wide wire and radio communication service with adequate facilities at reasonable charges."\textsuperscript{75}

The Act thus amends § 151, which many have interpreted as the first and heretofore sole statutory basis for universal service, by prohibiting discrimination in the provision of service. Nevertheless, in doing so, the legislation fails to address the concern of minority and poor communities that they are being electronically redlined because they are perceived as being less economically desirable, not necessarily because they are composed of religious, ethnic or racial minorities, or women.\textsuperscript{76}

Section 254 establishes the procedure whereby the FCC will develop the new and evolving definition of universal service, including which services will be deemed "basic" or "advanced," what subsidies will be created, and who will be eligible for them.\textsuperscript{77} However, given the bifurcated definition of services, the section contemplates that all Americans will not be able to afford all services immediately and thus will not be economically entitled to have access to them. Therefore, even with the nondiscrimination principle in § 151, and, even if access to "basic" services is actually achieved via § 254, the Telecommunications Act does not prohibit or discourage business decisions to delay or decline to upgrade architecture or provide new services in many communities.\textsuperscript{78} Nor does it create a positive incentive structure for

\textsuperscript{75.} 47 U.S.C.A. § 151. Section 104 of the new Act, entitled "Nondiscrimination Principle," amends Title I, Section 1, (§ 151) of the Communications Act of 1934 by inserting after "to all the people of the United States," "without discrimination on the basis of race, color, religion, national origin, or sex . . . .".

\textsuperscript{76.} Ted Hearn, Ameritech: We Don't Redline, MULTICHANNEL NEWS, July 29, 1996, at 3; Ted Hearn, Cable Accuses Bells of Targeting Only Wealthy, MULTICHANNEL NEWS, Apr. 17, 1995, at 18; John J. Oslund, US West’s Long March; Snarling Customers, Deep-Pocket Competitors, Fickle Regulators, Anxious Shareholders and a Minefield of New Technologies Make for a Perilous Journey, STAR TRIB. (Minneapolis), July 17, 1995, at 1D.

\textsuperscript{77.} 47 U.S.C.A. § 254.

\textsuperscript{78.} Nor should it necessarily do so. Deploying technology and introducing new services on the basis of likely market demand and timely return on investment constitute sound business practice. As one telephone executive has stated: "To say that we are going to stay out of areas permanently is dishonest and ridiculous. But we had to start building our network someplace. And it is being built in areas where there are customers we believe will use and buy the service. This is a business." Rose, supra note 12, at 22 (quoting Jerry Brown of US West). The difficulty arises because the technologies deployed and services introduced likely will have a profound impact on the realization of educational, political and service availability as well as economic
encouraging earlier deployment.\textsuperscript{79} So long as the competitive business decisions are based on perceptions that communities possess limited wealth, or constitute less desirable markets, those communities will continue to be left out for the near term when it comes to the provision of all services not deemed "basic."

VI. Conclusion

Being a "baby-boomer," my life spans the beginning of the era in which electronic media overtook the printed word and the era in which the Internet and open networks may overtake the television, telephone, and cable. During this time, there have been a plethora of enduring images. At least three seem appropriate to mention today.

Two are enduring images from my childhood education and come from books. The third is uniquely electronic. The first is a picture of Thomas Jefferson writing the Declaration of Independence, giving voice to the American version of the Enlightenment ideal "that all men are created equal." The second is a picture of a young Abraham Lincoln reading a book by candlelight, with its strong message about the transformative value of the self-motivated pursuit of knowledge. From my adulthood comes the third image of a recent president, Ronald Reagan, whose mantra of marketplace economics and self-interested consumerism has become the balancing cornerstone to the "New Deal" of FDR and the "Great Society" of JFK and LBJ.

For me, these images are metaphors for the three roles that define who we are as Americans. From the democratic vision of Jefferson, our enduring sense of equality and responsibility as citizens in a democracy, from Lincoln, our evolving, self-empowering role as lifelong learners, and from Reagan, our concurrent role as consumer drivers of the economic engines of our economy.

These three roles are also those that are potentially at war when we consider this new law. Our goal is to facilitate lifelong learning and electronic democracy as well as economic competitiveness. But, we


\textsuperscript{79} This is one of the legislation's true shortcomings. While it establishes a technology fund to underwrite the development of new telecommunications businesses, the criteria for funding will necessarily entail the adoption of monetary and market disciplines similar to those employed by firms currently entering or competing in the more desirable markets. Even with liberal interconnection requirements, resale protection, and short-term entry barriers for network based competitors, absent the creation of an incentive structure favoring investment, deployment and service provision in less developed markets, entrepreneurs entering such markets will still find raising capital and providing service at a profit more difficult.
are told that it is as consumers that we usher in this new era. That, as consumers, we may exercise our economic franchise and determine what equipment, technologies, and services will be offered, at what prices and quantities, and to whom. There is a major flaw in this prescription. Our nation has the greatest discrepancy between economic classes of all the major industrialized nations.\textsuperscript{80} To the extent that dollars of disposable income drive deployment, we have written a prescription for market-driven democracy. I submit that such a prescription is fraught with the potential for disaster for those already on the verge of exclusion from the electronic democracy because of their exclusion from the economic polity. Unlike economic goods, however, democracy, citizenship and individual freedom should not be distributed on a free market, pay-as-you-go basis.

Without a continuous quest for and acquisition of knowledge, we cannot be well-informed citizens or consumers. Without the exercise of informed citizenship, we risk dimming the light of knowledge, muzzling freedom of speech, and undermining the strength of our economic polity. Without informed consumerism, we run the risk of exercising our economic franchise in ways that diminish the value of citizenship and consign many to ignorance.

\textsuperscript{80} The conventional wisdom used to be that the disparity between rich and poor was a price of economic growth, particularly for poor countries pursuing industrialization. Differences in income were perceived as necessary to provide an incentive for people to strive. And without those people who earn considerably more than they need for life's daily necessities, a society may not have enough savings to pay for new factories, equipment and the other underpinnings of an industrialized economy.

But that conventional wisdom has been challenged in recent years as economists have noted that countries with relatively equal distributions of income have achieved higher rates of economic growth than those with considerable economic inequality. In the more unequal nations, economists argue, more people lack access to the education and training that would enable them to contribute to economic growth.

These concerns were underlined by a study released last week by a nonprofit research institute in Luxembourg that found poor children in the United States to be poorer than the children in 15 other Western industrialized nations. Only in Ireland and Israel were the poor children worse off.

The study followed several academic papers released last spring that say the United States has the most unequal distribution of income and wealth of any Western industrialized country. While many middle-class families have become very affluent as the economy has expanded over the last 15 years, many other families are sinking financially, so that the ranks of the middle class are thinning. The result has been alarm among many economists.

The universal service provisions of the new telecommunications bill are an admirable first step in addressing these risks. However, the work in assuring universal access to self-empowering telecommunications technologies, and universal access to information they can provide, has just begun. Proceedings will eventually begin in every state, as well as at the FCC, to define what constitutes universal service and how to pay for it. As these proceeding occur, we must assure that all Americans are represented and that the guiding principles of the Congress are interpreted so that they indeed provide the floor below which no American can fall.