

The Information Superhighway: Trolls at the Tollgate

Charles M. Oliver*

I. Introduction 53

II. Status Quo Ante—Before the Telecommunications Act of 1996 59

III. Key Provisions of the Telecommunications Act of 1996 61

A. Open Competition Requirements 63

B. Unleashing the BOCs 65

C. Transitional Safeguards 66

D. Universal Service Fund Provisions of the 1996 Act 67

IV. Implementation of Key Provisions of the 1996 Act 68

A. Strategic Positions of the Players 68

B. FCC Implementation Proceedings 71

1. The Local Competition Proceeding 71

2. The Universal Service Proceeding 75

3. The Access Charge Proceeding 78

V. The Vice President's Goals 80

VI. How To Pay for a Switched Broadband Network 81

I. Introduction

Children generally grow up wanting to do at least as well as their parents. For most of us that challenge seems reasonably attainable, at least in our early years. Albert Gore, Jr. was no exception even though his father was a U.S. Senator who reputedly played a major role in the creation of the Interstate Highway System. During the presidential campaign of 1992, the younger Gore, with support and encouragement from Bill Clinton, proposed that the U.S. government fund construction of an "Information Superhighway" capable of carrying two-way switched video signals to every home and business in America by 2015; the same year the Japanese had targeted for completing a similarly ubiquitous broadband system in their country.¹

Ronald Brown, then Chairman of the National Democratic Party, dutifully echoed the views of the future President and Vice President on this issue, but when he was installed as Secretary of Commerce, he recognized that governing the country required more than campaign rhetoric. With the combination of brutal candor and disarming modesty that made him such an effective Secretary, he sent a message downstairs to the National Telecommunications and Information Administration (NTIA), saying, "This information superhighway we've been advocating—can you tell us what it is?"²

The career civil servants at the NTIA responded by noting estimates that the kind of system being advocated by the Vice President would cost 200 to 400 billion dollars, and politely inquired if the Administration intended to seek a direct appropriation of those funds from Congress.³ The staff noted in passing that the private sector was already investing approximately 50 billion dollars per year in the U.S. communications infrastructure, and further noted that a

minor change in price cap formulas applied to telephone companies could by itself liberate enough capital to fund the desired system, without any taxpayer money being required.⁴

As it turned out, the Administration was less interested in pumping taxpayer money into the telecommunications sector than skimming a little off the top, and supported legislation authorizing radio license auctions that have thus far generated more than 20 billion dollars for the general treasury.⁵ But Vice President Gore and, to a lesser extent, President Clinton, maintained their interest in the information superhighway, even while modifying their approach to pursue the objective using regulatory incentives instead of taxpayer dollars.

The Administration's evolving telecommunications policy eventually led to a compromise with Republican ideologists and business lobbyists to produce the Telecommunications Act of 1996 (Act or 1996 Act).⁶ Aspects of the 1996 Act have generated severe criticism, but the colliding vectors of mutually conflicting ideologies and special interests have produced a result that is surprisingly progressive in concept, though it remains to be seen whether the practical results will live up to the stated purposes of the legislation. A comprehensive review of the 1996 Act's many provisions is beyond the scope of this Article; for context, it suffices to observe that the core of the 1996 Act is a quid pro quo in which the Regional Bell Operating Companies (RBOCs) must expose their local exchange telecommunications businesses to competition and, in return, will be permitted to enter the long-distance telecommunications and equipment manufacturing businesses.⁷

How does this giant compromise affect the Information Superhighway? It fills in a missing piece of the puzzle that Secretary Brown and Vice President Gore were facing at the beginning of the Clinton Administration. Under the price cap formulas in effect at the time, the Federal Communications Commission (FCC or Commission) required the larger incumbent local exchange carriers (ILECs) to reduce their prices by about three percent per year, after adjusting for factors beyond their control such as inflation and changes in the tax code. Requiring them to reduce their prices by only about two percent per year would, in principle, leave enough money on the table to build a broadband information superhighway reaching nearly every American home and business by the year 2015.⁸ But what would guarantee that the money would be applied for that purpose?

If the guarantee came in the form of administrative edicts, then the government would be acting like the former Soviet Union's economic ministries, issuing top-down directives to use any technology in stated quantities. At this juncture of the analysis, the Vice President and his advisors began to look at the potential benefits of competition—not from an ideological perspective, but as a more flexible means of driving the system toward the result they had originally intended, with more responsiveness to evolving technology and consumer demand.

There was substantial precedent from earlier competitive openings in the communications marketplace. When third parties were allowed to connect customer premises equipment to the predivestiture network of AT&T, the competitive market produced fax machines and telecommunicating computers. When competitors were allowed to enter the long-distance business, users discovered that Sprint's all-fiber network produced noticeably better quality than AT&T's microwave relay network, and the telephone giant was forced to take multibillion dollar write-offs and invest heavily in new technology just to stay in the game. Enhanced data communication services, which had been deregulated and opened to competition since 1980, were already generating tens of billions of dollars a year in revenues and starting to coalesce into the entity we know today as the Internet.⁹ Even in local exchange networks, where nascent competitors were just beginning to provide access links to long-distance carriers at the beginning of the Clinton Administration, some of the new entrants were providing superior service through innovations like self-healing fiber rings that automatically rerouted calls when lines were broken. Based on prior experience, there was every reason to believe that the introduction of full competition into the local exchange market could not only drive prices downward; it would probably drive quality and capacity upward. In fact, competition might drive high technology even without a deceleration in the downward movement of price cap targets.¹⁰

In the end, the Clinton-Gore team's analysis led it, if not to the same conclusion as conservative ideologists, at least to a point where a reasonable compromise could be reached. The upshot was a result that made considerably more sense than either of the two extremes. The early Gore approach would have required a reversion to Soviet-style *diktats*, but the more extreme proponents of laissez-faire principles were equally naive in their belief that deregulation alone would

produce a satisfactory result. Gore was smart and, therefore, educable; the Libertarians and the telephone companies' lobbyists were smart and saw a Democratic filibuster and possible presidential veto on the track they were following.

Whether by accident or design, the legislative outcome was consistent with a recognition that competition in local telecommunications exchanges can take root and flourish only if government requires the monopolists—the ILECs—to expose separated portions of their networks to competition. It would have been unreasonable to expect any new entrant to compete across the board with all the services offered by the ILECs, and it might have been economically inefficient as well to require every competing carrier to run its own wires or fibers into every home or business.

The legislation requires at least the nine largest ILECs, and potentially others, to unbundle their networks and make the parts available separately to competitors.¹¹ So far, the unbundled element being sought most avidly by competitors is the so-called local loop, the wire, or in some cases, the optical fiber running between the end user's premises and its first point of contact with the switching network.¹² Most of the competitive local exchange carriers (CLECs) believe that they are capable of installing their own switches and connecting those switches to each other with trunk lines, but most CLECs can justify running their own cables all the way to end user premises only for big customers spending thousands of dollars a month on telecommunications.¹³ To make their services available to medium- and small-sized customers, they must be able to lease existing local loops from the ILECs and connect those loops to CLEC equipment.

Here we begin to approach the vortex that Congress dared not enter. Unbundling only matters if the unbundled element is made available at a price that is commensurate with the limited nature of the service being sought and obtained by the competitor. If an unbundled local loop costs as much as end-to-end telephone service, for example, the unbundling is a useless myth. Somebody has to set the prices, and it would be impossible for Congress to perform that role. Yet, if the prices were set wrongly, the entire superstructure would collapse and the 1996 Act might as well not have been passed.

Here, also, we encounter a series of potentially serious conundrums. Setting prices of unbundled elements in an economically efficient manner implies that such prices should bear some rational relationship to cost, but most analysts believe that the monopolized portion of the telecommunications service sector is rife with implicit subsidies, with some services priced well above cost and others priced either below cost or with substantially lower margins. If retail prices for some services continue to be set at a level well above cost, and the underlying network elements are made available at or near cost, the result is an open invitation for resellers to circumvent the existing retail pricing structure by subscribing to unbundled network elements.

If policy makers were writing on a blank slate and were not subject to political pressures, a strong argument could be made for a thoroughly cost-based network. The problem is that the deployment of people and resources in businesses, communities, and to some extent even entire states, is premised in part on the existing telecommunications rate structure. Politically, the process is driven in part by the system of government given to us by the Founding Fathers, which provides a disproportionate influence to rural states in the U.S. Senate. The authors of the 1996 Act recognized that cost-based interconnection to unbundled network elements would tend to drive hidden subsidies out of the system, and provided a mechanism for establishing a system of explicit subsidies designed to preserve some, but not all, aspects of the status quo ante, and to provide new subsidies to schools, libraries, and rural health service providers.

This Article addresses the vulnerabilities of existing stakeholders—as well as their opportunities—in the ongoing processes by which the 1996 Act is being implemented. The analysis begins with a brief description of the status quo ante, followed by a summary of provisions of the 1996 Act that are most salient to Internet Service Providers (ISPs) and their equipment suppliers. This Article then discusses the three most important implementation proceedings at the FCC: dealing with interconnection issues, subsidies, and access charges. The important roles played by the courts and the states are also addressed. This Article concludes with a strategic analysis that addresses the Vice President's vision of the information superhighway in the context of practical constraints.

II. The Status Quo Ante—Before the Telecommunications Act of 1996

After starting with the FCC's *Carterfone* decision in 1968,¹⁴ competition in the U.S. telecommunications sector by

1996 had spread to include customer premises equipment, value-added resale services, and long-distance services, including satellite. The last bastion of monopoly was the local telephone exchange, and it was heavily regulated. Prices in local exchanges (including so-called "exchange access" charges applied to long-distance carriers for the privilege of traversing local exchanges) were heavily politicized. The local exchange was the natural habitat for any price trolls in the telecommunications sector.

The idea of trolls in this context is, admittedly, an imprecise analogy. Trolls do not purport to serve the public interest. The better analogy is the family in William Faulkner's novel, *The Reivers*,¹⁵ that provided a for-profit service extracting passersby from a ford where their vehicles became mired. The family would use their mule for plowing the ford when it was not hauling cars, but motorists always welcomed its assistance.

Prior to adoption and implementation of the 1996 Act, all interstate, interexchange telecommunications carriers (IXCs) that used local exchange switching facilities to complete their calls were required to pay per-minute carrier charges to the local exchange carriers (LECs).¹⁶ These charges provided support for explicit subsidies, the Universal Service Fund and Lifeline Assistance,¹⁷ amounting to about 750 million dollars in 1996, as well as a number of hidden subsidies buried in charges for various services.¹⁸ As discussed below, the hidden subsidies were larger than the explicit subsidies by at least an order of magnitude. IXCs passed the burden of these contributions along to end users, generally asserting that about forty percent of the charges for interstate telephone calls were attributable to the cost of local exchange access.¹⁹

The pre-Act regulatory environment was replete with loopholes that enabled major users to limit their contributions to telecommunications subsidies. No per-minute or special access charges were applied to any termination of a line that by nature of its operating characteristics could not make use of common lines used to provide public switched telephone service,²⁰ and a similar exemption applied to any termination of a line that the customer certified was not connected to a private branch exchange (PBX) or other device capable of interconnecting a local exchange subscriber line with the customer's private line.²¹ Many major users availed themselves of the latter exemption by attesting that they had partitioned their PBXs, thereby claiming that their private lines were not connected to the public switched network.²² Neither the FCC nor the carriers had any practicable means of checking the veracity of these assertions. This exemption was a legitimate and credible resource for ISPs providing Internet access services to business via private lines, because for that kind of service there is little reason to connect the lines being used with public switched network facilities.

A more controversial exemption applied to ISPs like America Online, which serves many residential and small business users that access the service on a dial-up basis, using the public switched network. Because ISPs and other enhanced service providers are not carriers, they were (and still are) treated as end users and allowed to connect with the public switched network by subscribing to local business line services, which for incoming calls are widely available for flat monthly rates.²³ This exemption attracted more attention than the private line exceptions because it differentiated between enhanced service providers and carriers using local switching facilities in a seemingly identical fashion to complete long-distance calls, with voice calls falling prey to per-minute subsidy contribution requirements, while enhanced service providers continued to enjoy flat monthly charges. The FCC also believed that it had legal authority to apply per-minute access charges to enhanced service providers even though it refrained from doing so, whereas, before the 1996 Act was adopted, the Commission did not seem to believe that it had legal authority to require subsidy contributions from users of private lines that were not connected to the public switched network. The Commission had initiated a rulemaking proceeding to eliminate the enhanced services provider exemption, but terminated the proceeding in 1988 in the face of intense political opposition from users of on-line services.²⁴

III. Key Provisions of the Telecommunications

Act of 1996

As mentioned above, the core of the Telecommunications Act of 1996 is a quid pro quo: the RBOCs will be allowed to get into the long-distance²⁵ and manufacturing businesses,²⁶ in return for which they must open their markets to

local competition.²⁷ The titanic lobbying struggle that preceded this legislation never questioned the basic terms of that bargain. The battle was fought over the terms and conditions that would be imposed on the BOCs as a condition precedent to their liberation.²⁸

The 1996 Act provides only part of the answer. The rest of the answer is being decided in litigation that is assuming complexity of Bosnian proportions, involving overlapping jurisdictions and criss-crossing lines of appeal. The Act sets forth general principles that are supposed to expose the BOCs, GTE, and Sprint to competition, and could expose other LECs to competition as well, depending upon decisions by state regulators.²⁹ The FCC is directed to establish regulations to implement interconnection and unbundling requirements,³⁰ but interpretation of the FCC's rules will be rendered by state public utility commissions.³¹ These independent and farflung entities, never known for docile and tractable adherence to FCC policies in the past, are conjured by the legislation to ensure that LECs meet the requirements of the statute and the FCC's implementing regulations. Parties aggrieved by state commission decisions are invited to appeal—not to the FCC, not to a state court of appeals—but to a local federal district court.³² In October 1997, the incoming FCC Chairman designate testified that ILECs had filed seventy-three challenges to state commission decisions in the courts.³³ These avenues could be overlaid with FCC complaint proceedings or federal preemption initiatives.

For the BOCs, this picture requires more detail. The BOCs must go through a separate and additional set of procedures when seeking permission to provide interLATA services in a given state or engage in manufacturing.³⁴ ("InterLATA" refers to service between local access and transport areas, each of which typically includes no more than one metropolitan statistical area or consolidated statistical area.) The FCC is directed to review BOC applications claiming compliance with the open competition requirements applicable to BOCs,³⁵ which are consistent with, but more fully articulated than requirements applicable to all nonexempt LECs.³⁶ The FCC is empowered to grant or deny these BOC applications and exercise continuing oversight thereafter, with authority to impose penalties or suspend or revoke approvals. The FCC is directed to "consult" with the relevant state commission (and the U.S. Attorney General) before reaching a decision, but the FCC is not required to follow the state's (or the Attorney General's) advice.³⁷ Parties aggrieved by FCC decisions reached under this procedure may seek review by a federal court of appeals.³⁸

The implications for procedural confusion are breathtaking even to attorneys long inured to complex and protracted litigation. A BOC could see its open competition plan approved or disapproved by a state commission, then find itself in a federal district court. An identical or opposite decision could be reached by the FCC, with a simultaneous appeal to a federal court of appeals. Since the court of appeals could be in a different circuit than the district court, the two lines of decision might never be reconciled, absent a decision by the Supreme Court to take up the matter. This scenario only portrays the extent of conflict possible over one controversy, without even beginning to address the potential inconsistencies among disparate LEC plans.

A. Open Competition Requirements

Procedural complexities aside, the open competition requirements contained in the legislation bear a remarkable resemblance to wish lists that facilities-based competitive access providers have been circulating for several years.

LECs are directed to unbundle their networks and allow interconnection at any technically feasible point, with competitive providers allowed to pick and choose what portions of those networks they will use—paying just, reasonable, and nondiscriminatory prices for the use of those selected piece-parts.³⁹ For BOCs, this means, at a minimum, that customers and competitors must be able to obtain, on a separate standalone basis, local loop transmission from the customer's premises to the nearest telephone switching office; local switching unbundled from transmission services; or trunk lines running between telephone company offices, unbundled from switching.⁴⁰ The BOCs are also required to provide nondiscriminatory access to databases and associated signaling necessary for call routing and completion.⁴¹

Competitive providers are given the right to locate their equipment on the premises of an incumbent LEC, unless the LEC can demonstrate that doing so would be impractical.⁴²

A LEC is required to offer for resale at wholesale rates any telecommunications service that the carrier provides at retail to subscribers who are not telecommunications carriers. The wholesale rates are to exclude the portion of retail rates attributable to any marketing, billing, collecting, or other costs that will be avoided by the LEC.⁴³ State commissions may, however, restrict resale by categories to avoid anomalies like resale of circuits bought at residential rates to business customers.⁴⁴ A LEC is required to provide reasonable notice of changes in the information necessary for the transmission and routing of services using the LEC's facilities.⁴⁵

These duties will apply to all LECs, except that carriers with less than two percent of U.S. access lines and rural LECs may qualify for exemptions. Rural telephone companies are automatically exempt until they receive bona fide requests for interconnection and the relevant state commissions determine that complying with the requests would not be unduly economically burdensome. Any carrier other than the BOCs, GTE, and Sprint may petition state commissions to suspend application of the requirements on grounds of economic or technical infeasibility.⁴⁶

The following requirements will apply to all LECs, including rural LECs, except that companies other than the BOCs, GTE, and Sprint may petition state commissions to suspend the requirements:

! Number portability—the duty to provide, to the extent technically feasible, the ability to switch carriers without changing telephone numbers. The BOCs are required to provide interim number portability through remote call forwarding and comparable arrangements.⁴⁷

! Dialing parity—the ability to have nondiscriminatory access to telephone numbers, operator services, directory assistance, and directory listings, with no unreasonable dialing delays.⁴⁸

! Access to rights-of-way—the duty to afford access to poles, ducts, conduits, and rights-of-way to competing providers, on the basis of specified rate structures.⁴⁹

! Reciprocal compensation—the duty to establish reciprocal compensation arrangements with competing local carriers for the transport and termination of telecommunications.⁵⁰

Finally, all telecommunications carriers, without exception, are required to interconnect directly or indirectly with the facilities and equipment of other carriers, and they are enjoined not to install network features, functions, or capabilities that do not comply with industry guidelines and standards.⁵¹ Telecommunications carriers⁵² are defined as providers of the means of "transmission, between or among points specified by the user, of information of the users choosing, without change in the form or content of the information sent and received."⁵³ Therefore, enhanced service providers are not subject to these requirements.

B. Unleashing the BOCs

The 1996 Act decreed that the BOCs would be unleashed in two stages. Stage one began when President Clinton signed the bill. The BOCs were immediately allowed to offer interLATA services originating outside the states where they have local exchange operations.⁵⁴ Exceptions include toll-free services, private line services, or equivalent services that terminate in an in-region state and allow the called party to determine the interLATA carrier.⁵⁵ The BOCs were also allowed to provide certain "incidental" interLATA services regardless of where they originate.⁵⁶ Incidental services include subscriptionbased audio programming, video programming, or other programming services; services offering the capability for interaction by subscribers to select or respond to such programming; two-way interactive video services or Internet services over dedicated facilities to or for elementary and secondary schools; commercial mobile services; services that permit a customer that is located in one LATA to retrieve stored information from, or file information for storage in, information storage facilities of that company located in another LATA; and signaling

information used for call set-ups and other network functions.

Before providing other in-region interLATA services or engaging in manufacturing, the BOCs were required to obtain an authorization from the FCC for each state where they have been operating local exchange facilities.⁵⁸ The FCC is directed to issue such authorizations only if it is satisfied that the BOC has met the open competition requirements, but the Commission is given only ninety days to reach a decision after receiving a BOC's application.⁵⁹ BOC representatives admitted privately that the Commission would be hard pressed to render sustainable decisions within the allotted timetable.⁶⁰ Their optimistic prognosis was that the Commission would grant their applications in the expectation that, thereafter, it could invoke its continuing authority to issue orders to correct deficiencies, enforceable by penalties or suspension of approval to provide long-distance service. The BOCs assume that the latter remedy will never be invoked, unless John Foster Dulles is resurrected and made Chairman of the FCC.⁶¹

C. Transitional Safeguards

Companies facing competition from the BOCs are understandably daunted by the prospect of corporate warfare with companies that have enjoyed long-standing monopolies in large regions of the country. If the open competition measures have their intended effect, the Bells' monopolies will eventually experience substantial erosion, but that may be a long time coming. For that reason, Congress required the BOCs to establish fully separated, arm's length subsidiaries for manufacturing activities (with the exception of research and royalty arrangements with other manufacturers); interLATA information services and origination thereof, other than the incidental interLATA services described above; out-of-region services; and activities previously authorized by the court with jurisdiction over the AT&T Consent Decree.⁶² The BOCs are barred altogether from providing alarm monitoring services for five years,⁶³ except that Ameritech's alarm monitoring services are grandfathered.⁶⁴

One of the most contentious issues before the conference committee was how long the separate subsidiary requirements should be maintained. The Senate bill would have left that decision up to the FCC;⁶⁵ the House bill would have phased separate subsidiaries out after eighteen months,⁶⁶ with the exception of so-called "electronic publishing" services, where the requirements would have been maintained for four years.⁶⁷

To some observers, the proposed four-year timetable for electronic publishing stuck out like a sore thumb, with skeptics speculating that Congress was granting a special favor to the politically powerful newspaper industry. The conference committee's solution was to extend the separate subsidiary protections for other affected industries. The BOCs will have to maintain fully separated subsidiaries for all information services, not just electronic publishing, for four years after the date of enactment.⁶⁸ For manufacturing and long-distance services, the arm's length requirement will cease to apply three years after the date the BOC is authorized to provide withinregion interLATA services (which will probably be about four years after the enactment date).⁶⁹ Moreover, the FCC is authorized to prolong the requirements for any affected industry if the public interest requires.⁷⁰

D. Universal Service Fund Provisions of the 1996 Act

The authors of the 1996 Act believed that increased competition would lead to service innovations and improvements in urban areas, but powerful senators from states with low population densities correctly perceived that competition would also erode the ILECs' ability to sustain hidden subsidies for service to rural areas. Congress responded by setting in motion a process to ensure that service to high-cost areas would continue to receive subsidies in the newly competitive environment. It also expanded the scope of services being funded.

The Act required the Commission to establish the Federal-State Joint Board on Universal Service (Joint Board) consisting of FCC commissioners, state public utility commissioners, and a state-appointed utility consumer advocate to advise the Commission on implementation of the universal service provisions of the Act.⁷¹ The Commission itself was required to complete the initial phase of the implementation process by May 1997.⁷²

The most expensive provision in the universal service section addresses the general needs of rural areas and low-

income individuals, the same interests that had been served by explicit and hidden subsidies before the Act was adopted:

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 rates charged for similar services in urban areas.⁷³

New subsidies were mandated to encourage the provision of advanced telecommunications services to K-12 schools, libraries, and health care providers in rural areas.⁷⁴

In 1995, the Congressional Budget Office took a look at expanded subsidies proposed in the Senate telecommunications bill and concluded that it would add 7.1 billion dollars to the subsidy requirements over a four-year period, ramping up to an annual incremental expenditure of 2.9 billion dollars by the fourth year. The final version of the legislation appears to incorporate all or most of the new subsidy provisions proposed in the Senate bill, but nobody yet knows how big the subsidy will be, because the FCC has a significant amount of discretion to fashion subsidy mechanisms as it sees fit, after receiving advice from the Joint Board.

The legislation closed most of the loopholes that had allowed major consumers of telecommunications services to avoid making subsidy contributions by piecing together their own private networks and attesting that significant portions of those networks were not interconnected with the public switched network. The 1996 Act directs and authorizes the FCC to ensure that all providers of telecommunications services will make an equitable and nondiscriminatory contribution to the preservation and advancement of universal service.⁷⁵

IV. Implementation of Key Provisions of the 1996 Act

A. Strategic Positions of the Players

Interest groups that participated in the legislative process recognized that the adoption of the 1996 Act was not the end of the game. The real outcome would depend upon the implementation process at the FCC, state public utility commissions, and the courts. The most important decisions would be expressed in dollars.

For the big ILECs, it was of paramount importance to stop paying hidden subsidies from services that will soon be exposed to the first onslaughts of serious competition. They sought to ensure that subsidy contributions would be imposed in a way that burdens their competitors as much as the ILECs. And they sought government help to recover their investments in obsolete equipment that was installed in a heavily regulated monopoly environment where depreciation schedules were artificially constrained by regulators.

The Vice President hoped to see Internet and switched broadband services provided not only to schools, libraries, and rural health institutions, but eventually to every home and business in America. He had come to understand that arcane decisions in obscure regulatory proceedings can have a huge impact on that process. Finally, he also sought to ensure that low-income constituents would share the opportunities presented by the new technologies.

IXCs were primarily concerned to see the overall cost of local access services driven downward. Demand for long-distance services is highly elastic, and the IXCs knew that the overall volume of business for all long-distance carriers could increase dramatically if access charges were significantly reduced. The IXCs were also keenly aware that the RBOCs were preparing to compete with them in the interexchange arena, and that their war chests were funded primarily by revenues obtained from the provision of local services. The IXCs see the RBOCs as their enemies, and want to see them weakened.

Most facilities based CLECs wanted to obtain high quality, unbundled local loops at prices as low as they could get them, but would presumably be content to see prices remain high for other parts of ILEC networks, since the CLECs plan to install their own switching and interoffice trunks.⁷⁶ The CLECs have never said so, but it seems reasonable to assume that high ILEC price umbrellas for switching and interoffice trunking would serve the CLECs' interests, at least

initially. This analysis could change if restructured prices cause the CLECs to begin seeking unbundled elements other than local loops.

Major consumers of telecommunications services were eager to see competition spread as quickly as possible, provided that competitors enter the market in response to accurate pricing signals. They knew that if regulators applied price floors below ILEC services in order to protect competition for competition's sake, competitors could be enticed to enter markets where they are not really the most efficient suppliers, and later seek government protection from more efficient operators. Major consumers were also concerned with the size of universal service subsidies and the mechanisms used to support them, because most major consumers are no longer in a position to avoid making contributions.

ISPs are a particular class of major consumers. When providing Internet services via private lines to business customers, their interests are closely aligned with other major consumers, because the 1996 Act renders all private lines vulnerable to state or federal universal service levies. The enhanced service providers' exemption from payment of usage-sensitive interexchange access charges for dial-up services is also under challenge,⁷⁷ threatening ISPs' ability to continue using flat-rated local business services.

Telecommunications equipment manufacturers generally see themselves as arms merchants. They do not care which service providers win the competitive race so long as they get to sell the hardware and software. For obvious economic reasons, they favor rapid construction of advanced networks. Manufacturers of customer premises equipment such as computers and components of computers, are also increasingly anxious to see broadband networks deployed.

The interests of ordinary consumers depend upon their existing and intended consumption patterns—the extent to which they use long-distance voice services and Internet services today, and the degree of interest they might have in future access to a broadband telecommunications system capable of providing two-way, switched video and data services. Traditionally, household consumers have been portrayed as being primarily interested in keeping bills as low as possible for basic local voice service, but that is starting to change. The Internet-user community is becoming large enough to represent a significant political force, and its influence is magnified by the fact that early adopters of that new technology, as for most new technologies, had more years of formal education and higher incomes than the rest of the populace.⁷⁸ This community's growing influence expressed itself recently when an organization calling itself the America's Carriers Telecommunications Association (ACTA) filed a petition with the FCC seeking to impose common carrier, utility-style regulation on Internet telephony, and the Commission issued a *Notice of Inquiry*: more than 400,000 Internet users filed informal comments by e-mail.⁷⁹ Nobody at the FCC had time to read them, but the agency got the picture and quickly put the proposal on a procedural track to nowhere.

B. FCC Implementation Proceedings

FCC officials stated on several occasions that they were preparing a "trilogy" of interrelated major rule makings to implement the core provisions of the 1996 Act.⁸⁰ The phrase had a faint whiff of literary grandiosity about it, and attracted sarcastic commentary from some of the less discreet participants in the process.

"We have heard from Moe. Now we are waiting to hear from Larry and Curly," was the comment offered by William Barr, the former U.S. Attorney General who is now general counsel of GTE. He was referring to the *First Report and Order*⁸¹ and the *Second Report and Order*⁸² in the local competition proceeding, which were both released on the same day, and expected subsequent decisions dealing with universal service subsidies and charges levied upon long-distance carriers for access to local telephone exchanges. Mr. Barr may rue the quotability of his humorous remarks, but most of the influential people at the FCC believe that his humor has sufficient artistic merit to justify at least a limited amount of mercy.

1. The Local Competition Proceeding

In its *First Report and Order* in the Local Competition Proceeding, the FCC spent the better part of 700 pages reaching conclusions that were preordained by the 1996 Act.⁸³ Of the previously unresolved issues, the most important

—and the most arcane—was pricing. The ultimate outcome would have profound implications for competitors, customers, and shareholders.

For most who had been watching the local competition docket from a safe distance—that is, those who declined the opportunity to read the 17,000 pages of comments initially filed in the proceeding—the general expectation was that the FCC would seek to prevent the ILECs from loading high prices onto monopoly bottlenecks (primarily local loops) while restraining the ILECs from setting prices below cost for parts of the network that are more vulnerable to competition (e.g., the trunk lines that connect ILEC switches to each other). The *Local Competition First Report and Order* made a good start in that direction,⁸⁴ but it also went much further in another direction, by addressing the overall level of prices charged by the ILECs.⁸⁵

Historically, regulators have usually allowed or required public utilities to set their prices primarily on the basis of so-called "embedded" costs. For most practical purposes, embedded costs are based on the prices that the regulated entity paid for its assets, minus whatever depreciation charges it has taken in the interim.⁸⁶ In the telecommunications industry, the first and most determined assaults on the embedded costs paradigm came from the predivestiture AT&T.

Faced with competition from new and hungry companies using the latest technology, AT&T knew that it could not retain its big customers if it continued to charge them prices based on obsolete and costly equipment. In those days and until quite recently, the FCC Common Carrier Bureau exerted most of its regulatory efforts toward enforcing price floors rather than price ceilings, to prevent predatory pricing in sectors exposed to competition. AT&T and, later, the divested BOCs, sought permission to set prices for services exposed to competition on the basis of long-run incremental costs (LRIC, pronounced "lyric" by the cognoscente). To the extent that LRIC-based prices for competitive services fell below embedded costs, the incumbent carriers sought to ascribe as much of those costs as possible to monopoly services or, where that proved infeasible, simply wrote off the unrecovered investment. AT&T, for example, took multibillion dollar write-offs for obsolete microwave equipment when Sprint and MCI challenged it with fiber optics.⁸⁷

LRIC-based pricing was a useful theory for the ILECs when its bright illumination was tightly focused on services exposed to competition, but it has proved inconvenient for them in the context of unbundled interconnection. The resulting course of debate has reconfirmed the generally observed phenomenon that economic principles espoused by private companies are typically driven by business realities more than academic theory. Confronted with legislation requiring them to set prices for all of the segregated piece-parts of their networks, incumbent LECs generally contended that prices should be based on embedded costs, that is, costs based on the individual LEC's existing network design and technology instead of the idealized least-cost, most efficient network design based on the latest technology.⁸⁸ The United States Telephone Association (USTA) argued that if competitors want to use an incumbent LEC's embedded plant, competitors should pay for the existing plant, not some theoretical, more efficient plant based on current technology.⁸⁹

In the *Local Competition First Report and Order*, the FCC enraged the ILECs by grabbing the LRIC spotlight, which the ILECs' economists had helped build, and shining it on monopoly bottlenecks, as well as the parts of ILEC networks that had previously been exposed to competition. The order directed the ILECs to set the prices for each of their unbundled piece-parts on the basis of forward-looking long-run economic costs.⁹⁰ The Commission also established pricing rules that minimize joint and common costs, limiting the ILECs' ability to ascribe costs underlying competitive services to monopoly services.⁹¹

In comments filed before the Commission issued its order, USTA cited estimates that a solely forward-looking, pricing methodology would preclude ILECs from recouping between 13 billion and 18.4 billion dollars in embedded costs.⁹² Looked at from another perspective, this could translate into double-digit multibillion dollar savings for ILEC customers, especially the long-distance callers that rely on ILECs to complete their connections to end users.

The National Association of Regulatory Utility Commissioners and others challenged the *Local Competition First Report and Order* as overstepping the FCC's jurisdictional authority.⁹³ Incumbent LECs argued that establishing a rate

structure that does not permit recovery of embedded costs is confiscatory, in violation of the Takings Clause of the Fifth Amendment of the U.S. Constitution.⁹⁴

In October of 1996, the U.S. Court of Appeals for the Eighth Circuit stayed the Commission's pricing rules for unbundled interconnection embodied in the *Local Competition First Report and Order* pending a review of the merits.⁹⁵ It quickly became apparent, however, that the court had merely stayed the FCC's interpretation of pricing standards embodied in the 1996 Act. The court's order had no effect on the statutory timetables for negotiation, arbitration, and approval of interconnection agreements by state public utility commissions.⁹⁶ CLECs still had the right to seek arbitration by the states when they were unable to reach satisfactory agreements with the ILECs, and the state commissions were required to conclude the resolution of any unresolved issues no later than nine months after the date on which the ILEC received the request for interconnection from the CLEC.⁹⁷

In February of 1997, an FCC official reported that thirty-three of the thirty-five states that had adopted pricing standards by that time had chosen to follow the pricing methodology for unbundled interconnection articulated in the *Local Competition First Report and Order*.⁹⁸ At that point, observers began to wonder what, if anything, the ILECs had gained from the Eighth Circuit stay, or stood to gain if the Eighth Circuit confirmed its tentative conclusions on the jurisdictional issue. If the FCC's explanation of its recommended approach was sufficiently coherent to persuade the states to follow it voluntarily, there might be no need to compel them to do so. Of course, it remained to be seen how the states would implement a model that they had adopted in principle. In the meantime, it began to look as if the ILECs were back to square one.

In July of 1997, the Eighth Circuit vacated most of the FCC's pricing rules but affirmed the Commission's conclusion that unbundled network elements can be used by CLECs to provide exchange access services.⁹⁹ The court vacated a Commission rule that had empowered CLECs to direct ILECs to recombine network elements, and an order on petition for rehearing voided a provision that blocked the ILECs from disassembling network elements if the CLECs requested that they refrain from doing so.¹⁰⁰

The Eighth Circuit decision will be appealed to the Supreme Court. In the meantime, state utility commissions are moving beyond interim decisions to adopt permanent pricing standards for unbundled network elements. By the time the case reaches the Supreme Court, the ILECs may have decided that a jurisdictional argument on pricing issues will buy them little, even if they win it. If so, their most likely alternative would be to concentrate their legal firepower on their fallback argument, that FCC-style pricing standards are an unconstitutional taking of property.

2. The Universal Service Proceeding

The first tremors of the universal service proceeding were felt in November of 1996, when the Joint Board recommended that the FCC begin to implement the Universal Service Fund by providing 2.25 billion dollars per year to subsidize Internet connections for schools and libraries, including internal wiring.¹⁰¹ "Plain-vanilla" Internet services would be eligible for the subsidy.¹⁰² Another category of the subsidy fund would support telecommunications services provided to rural health institutions, poor people, and users in rural areas.¹⁰³ When combined with subsidies for high-cost (mostly rural) areas and low-income individuals, the overall size of the fund was expected to reach between 5 and 14 billion dollars annually, depending upon how regulators calculate telephone company costs. The Clinton Administration's annual budget proposal for 1998, for example, projected that the FCC's Universal Service Fund would grow from 1.4 billion dollars in fiscal year 1997, to 2.24 billion dollars in 1998, to 6.3 billion dollars in 1999, to 11.3 billion dollars in 2000, to 12.2 billion dollars in 2001, and finally to 12.8 billion in 2002.¹⁰⁴ These numbers differ radically from the estimates that the Congressional Budget Office (CBO) provided during the legislative process in 1995, when the CBO projected that the Universal Service Fund would reach 2.9 billion dollars by its fourth year. The Administration's estimate for the same year was nearly four times as large. Yet, the subsequent expressions of consternation from Capitol Hill were reminiscent of the famous scene at the conclusion of the movie *Casablanca*, when Claude Rains's police chief character expressed "shock" at hearing of misbehavior that for years had been going on under his nose. The Telecommunications Act of 1996 contains no limit on the Commission's largesse in dispensing universal service funds, except for vaguely worded language referring to the public interest.¹⁰⁵

In May of 1997, the FCC adopted most of the Joint Board's recommendations and added an additional 400 million dollars per year for rural health service providers, bringing the total amount of new subsidies to 2.65 billion dollars per year, when funds for schools and libraries are included.¹⁰⁶ The Commission decided to continue studying proposed cost models for service to rural areas, leaving observers to wonder which end of the 5 to 14 billion dollars per year range of estimates for that purpose was most likely to prevail. The agency decided that it would generate the required funds by collecting a percentage of gross retail revenues from most telecommunications providers. The providers were allowed flexibility to decide on their own how to pass the levy through to end users.¹⁰⁷

In July of 1997, the Commission released a *Second Order* and a *Further Notice of Proposed Rulemaking* that moved the agency toward a clearer delineation of universal service costs and how the process will be administered.¹⁰⁸ In the *Second Order*, the Commission for the first time provided percentage estimates for the levies that may be applied to retail telecommunications revenues to support federal universal service programs. Based on those numbers and subsequent discussions between the Author and Commission staff, it appeared that an initial levy rate of approximately 1.6% would be applied to gross retail revenues from intrastate, interstate, and international telecommunications to subsidize service to schools, libraries, and rural health care providers,¹⁰⁹ and that a 2.3% levy on interstate retail revenues may be required to continue existing explicit subsidies for high-cost telephone companies and low-income individuals.¹¹⁰ However, FCC staff estimates implied that the levy on interstate retail revenues for support of service to rural areas could approach 6% in 1999, when the high-cost fund is expanded to cover rural areas situated within the territories of larger ILECs.¹¹¹ These amounts would be in addition to the expected 1.6% levy for schools, libraries, and health services applied to interstate and intrastate revenues by the FCC. Meanwhile, the average for state universal service levies could rise as high as 11% in 1999.¹¹² In combination, the potential liability for all of these levies could exceed 7% of gross interstate retail telecommunications revenues¹¹³ and approach 13% of intrastate revenues in the average state, with rates potentially much higher in individual states.¹¹⁴

These numbers reflect the high-end cost-of-service estimates being advocated by the ILECs. The levy rates would be much lower if the cost models being advocated by IXCs are adopted. All of the estimates will be subject to change after telecommunications providers file retail revenue reports in the fall of 1997. Under any conceivable scenario, however, universal service levies will be sizable enough to qualify as real money, even by Washington standards.

The situation is somewhat reminiscent of an old *New Yorker* cartoon depicting the entrance to the House Ways and Means Committee's hearing room. Workmen were pictured adding, "The Powerful" above the "House Ways and Means Committee" sign. In the old days, that was one of the few entities that was empowered to make routine decisions involving tens of billions of dollars, and even they had to get approval from the Congress as a whole. The FCC does not have to get approval from anybody, as long as it satisfies the courts that it has complied with the public interest standards in the 1996 Act. Perhaps a sign should be placed above the entrance to the FCC that reads, "The *Really* Powerful." The sign could actually be mass produced, because similar statements could be made about the state commissions, which will be setting intrastate levy rates.

For big ILECs, the new and expanded universal service funds will be used in part to replace hidden subsidies with explicit subsidies. ILECs will continue to be the main subsidy recipients. From the perspective of users and providers that have not been required to make subsidy contributions in the past, however, the levies will look and feel very much like new taxes.

3. The Access Charge Proceeding

In its access charge reform docket, the Commission announced that it was reexamining ILEC charges for completion of interstate interexchange calls.¹¹⁵ The Commission initially seemed to recognize that, if access charges were not made consistent with the prices being established for unbundled network elements, IXCs might reduce their use of ILEC access services and substitute use of unbundled network elements, either pieced together or obtained in a rebundled package after directing the ILECs to refrain from ever separating the "unbundled" elements. The latter approach was a permissible option under the FCC's local competition rules,¹¹⁶ but carriers were not certain how perfect a substitute

unbundled interconnection would prove to be for traditional access services. The answer would be affected by state commission pricing decisions, which were still in process at the time (and will likely remain in process for the indefinite future). It was also becoming increasingly apparent that the process of obtaining unbundled network elements from the ILECs would be slow, painful, and extremely complicated, because the ILECs lack the will and, perhaps, the ability to develop user-friendly operational support services. With those matters unresolved, access charge prices continued to be very important: carriers and other interested parties swarmed the FCC and began taking out full-page advertisements on access charge issues in

The Washington Post.

In May of 1997, the FCC released its *First Report and Order* in the access charge proceeding.¹¹⁷ IXCs were disappointed to learn that the Commission had not adopted a flash-cut reduction in access charges consistent with the forward-looking cost models that the agency had been promoting in its local competition and universal service proceedings. The agency chose instead to accelerate the annual rate at which ILECs will be required to reduce their access charges. Beyond that, the Commission indicated that it would rely on the availability of unbundled interconnection as an alternative to drive access prices downward.

That the Commission had flinched in the face of intense lobbying by the ILECs was not particularly surprising. More intriguing was the agency's decision to restructure the manner in which access charges are collected. Previously, providers of dial-up interstate interexchange service had been required to pay per-minute charges for access to local exchanges, equal to about forty percent of prices charged to long-distance callers.¹¹⁸ The Commission decided to begin phasing out all per-minute access charges that had been used to pay for local exchange equipment whose cost does not vary with usage, including the wires that connect homes to telephone company offices. To replace that source of revenues, the Commission decided to increase flat monthly charges applied directly to multiline business users, and it would phase in flat, per-subscriber charges to be paid by IXCs for access to the local exchange.

It remained to be seen how the IXCs would flow through the new flat monthly charges to end users, but the likely effect on most dial-up users of interstate long-distance services could have been a sharp reduction in per-minute charges coupled with an increase in flat monthly charges. Some carriers might even have considered offering unlimited long-distance calling for flat monthly charges, even though the IXCs would continue to pay some per-minute charges for access to local exchanges. In the real world, these hypotheticals represent wishful thinking, however, because long-overdue reform of the access charge system did not occur in isolation. It occurred at precisely the same time that the Commission was implementing the new universal service subsidy system. The Universal Service Fund will not be funded by per-minute access charges, but it will be funded by a percentage levy on retail revenues.¹¹⁹ On the same day, the Commission had decided to phase out one kind of usage-sensitive charge and to phase in another.

To those who understood what was happening, the sense of emotional deflation resembled what proponents of nuclear energy must have experienced when they began to realize that atomic power would not be too cheap to bill, despite their high hopes that it would be. In the telecommunications case, however, the too-cheap-to-bill scenario was not a technological impossibility. It had been defeated by a political process.

V. The Vice President's Goals

While telecommunications policy wonks were working toward a too-cheap-to-bill solution for long-distance telephone services, Albert Gore was nurturing a different kind of vision. For the past decade, as a Senator and then as Vice President, he has been advocating construction of a switched broadband network capable of providing two-way video and high-speed data communications to every home and business in America.

As ambitious as that prospect may seem, it is perfectly in tune with a tradition of nation-building that began long before the Interstate Highway System. When America's commerce consisted primarily of tangible goods, Thomas Jefferson dispatched Meriwether Lewis to find a riverine route to the West Coast. Later, government land grants played a major role in the construction of coast-to-coast railways. The U.S. Postal Service sprang from a similar impulse: the famous quotation inscribed on the main post office in New York City, "Neither snow nor rain nor heat nor gloom of night will stay these couriers from the swift completion of their appointed rounds," originated not with Benjamin Franklin, as many assume, but from Herodotus, describing the mounted couriers of the ancient Persian

empire.¹²⁰

Today, with trade in information absorbing an increasing share of the national economy, the communications infrastructure is more important than ever before. However, the Vice President wants a system that will be capable of transmitting more than words and numbers; he wants images as well.

To those who may consider image transmission a trivial or superficial concern, it is worth noting that many historians mark the beginning of the High Middle Ages as occurring around the time when Abbot Suger advised the King of France to build the first Gothic-style cathedral at St. Denis, as an expression of royal piety, wealth, and power. Half the cost of the typical Gothic cathedral was accounted for by windows: the main purpose of the new architectural style was to expand the space available for stained glass.¹²¹ Kings and kingmakers expended enormous resources to build showcases for colorful images which, in the context of the time, had powerful cultural and political overtones. Albert Gore was exposed to the same kinds of images as a student at St. Albans, on the grounds of the National Cathedral in Washington, and it is possible that Suger's legacy resonated with the future Vice President. Today, Vice President Gore stands beside the throne and calls for a modern infrastructure capable of sustaining a different kind of image transmission, more utilitarian but no less dramatic.

The Vice President has shown considerable flexibility in the tools he will use in pursuit of that goal, and there is every reason to believe that he and his advisors will be open to advice from all sides of the political spectrum. There is nothing in the Vice President's history to suggest that he is inclined to choose deregulation for the sake of deregulation. He and his protégés, including the Administration's appointees to the FCC, will follow a deregulatory approach if they are presented with convincing arguments that it will work better than the alternatives, but they will not recoil from an interventionist approach if it appears more promising to them.

VI. How To Pay for a Switched Broadband Network

The analysis of funding issues can be simplified if we assume that the FCC and the states will continue along the path that most of them seem to be following already, that is, preparing to set prices for unbundled network elements on the basis of long-run incremental costs and that rates for both interexchange access services and local services will be transitioned to levels that will be sustainable in the face of unbundled interconnection. The analysis can be further simplified by assuming that the FCC and the states will continue to allow CLECs to provide exchange access service using unbundled network elements, without requiring them to deploy facilities of their own before doing so, and that regulations will prevent ILECs from interposing unnecessary complications into the process of reconnecting unbundled elements to each other. This kind of pure arbitrage should drive access charges downward faster, though not necessarily as far as, facilities-based competition.¹²²

Those assumptions allow us to focus on the most important unanswered question: how to generate the multibillions of dollars per year that will be necessary to support the Universal Service Fund. As reflected in nearly 200,000 pages of comments filed in the Commission's access reform and universal service proceedings,¹²³ the collective intelligence of the communications bar has been able to produce only three viable alternatives:

- (a) A usage-based fee, expressed as a proportion of revenues generated.
- (b) A flat monthly charge, levied directly on end users or indirectly through interexchange carriers.
- (c) A combination of (a) and (b).

All of these alternatives have serious flaws. We know from experience that usage-based fees can seriously depress usage of the network. Prior to 1985, IXCs supported the entire federal allocation of local exchange costs through usage-based charges, generally by paying several cents per minute for dial-up interstate calls traversing local telephone exchanges. Beginning in June of 1985, the FCC directed the LECs to begin reducing those per-minute fees and to make up the shortfall by phasing in flat-rated subscriber line charges (SLCs, pronounced "slicks"), with caps for the flat-rated charges eventually rising to \$3.50 per month for residential lines and \$6 per month for business lines in 1989.¹²⁴ The average price of dialed interstate long-distance service declined by more than forty percent between 1983

and 1993 in inflation adjusted terms, and interstate calling volume, measured in minutes, more than doubled.¹²⁵ Some economists maintain that all, or nearly all, of the decline in dialed interstate long-distance rates during that period is attributable to flow-throughs of reductions in the LECs' per-minute exchange access charges, which in turn were made possible by substitution of flat-rated SLCs.¹²⁶

The SLC was justified in part by the fact that many of the costs associated with local exchange telephone service are fixed, that is, their costs do not vary with the level of traffic traversing them. The most obvious example is the local loop. If subscribers can be induced to pay for fixed costs up-front, then usage-based fees can be reduced. By paying an extra forty-two dollars per year for residential lines or seventy-two dollars per year for business service, users obtained much lower per-minute charges for interstate long-distance services and, as a consequence, dramatically increased the volume of such calls.¹²⁷ The revised rate structure was also more consistent with economic theories that recommend pricing on the basis of demand elasticities, with price reductions applied first to services with the highest elasticities of demand.

The FCC's *Access Reform First Report and Order* would have completed that process by phasing out all per-minute exchange access charges for the support of equipment whose cost does not vary with usage. The eventual result would have been a dramatic reduction in per-minute charges for interstate long-distance service.

The *Universal Service Report and Order* has the opposite effect. When usage-sensitive levies are applied to all telecommunications services to support an expanded universal service fund, the effect will be to limit the dramatic benefits that were achieved, with much courage in the face of significant political opposition, when the SLC was phased in. It will also undercut similar but more far-reaching benefits that could have been achieved by the *Access Reform First Report and Order*. It is not inconceivable that prices charged for dial-up long-distance services could begin to rise if new subsidies continue to proliferate. Worse, the depressant effect could affect all telecommunications services, including those used to support the Internet and proprietary on-line services, because rate increases will inevitably flow through to users.

The intensity of the depressant effect will depend upon the amount of money required to support the Universal Service Fund. The larger the benefits bestowed upon schools, libraries, health institutions, poor people, and people living in rural areas, the greater the drag will be on services provided to others.

In fairness to the Vice President, one must acknowledge that the 2.65 billion dollars per year that the FCC is bestowing on schools, libraries, and health providers is a fraction of the 10 billion dollars plus that the system awards every year to all rural residents—upper-, middle-, and lower-class alike. In fairness to the senators who represent low-density states, one should acknowledge that they, too, have a vision. One Senator tells a charming story about the first felony committed in his hometown, after which it was discovered that hardly anybody there bothered to lock their doors—even when leaving for extended vacations.¹²⁸ The mere knowledge that such places exist is a salve to the spirit of all Americans, including those who live in large cities; yet, it gives one pause when the Senator provides the postscript to this idyll: providing telephone service to that town requires a monthly subsidy of approximately \$200 per home per month.

After hearing that story, I told the Senator that I hope one day to visit his hometown, but that I also wonder how he can justify funding those subsidies by applying a surcharge to telephone services used by urban residents who sleep in bathtubs to avoid being hit by bullets. Would it not make more sense to support such subsidies from general tax revenues? The Senator answered truthfully and candidly: it might make sense, but if people knew what they were being asked to pay, they would not pay it.

That, unfortunately, is the whole point. Rural senators and the Vice President, having discovered the FCC's ability to redirect billions of dollars with arcane regulatory formulas, have discovered a magic elixir. Drink the potion, and their respective dreams and visions are brought to fruition, without having to go through the House Ways and Means Committee or the Congress as a whole.

The bureaucrats who taught the Vice President how to pursue his visions without dipping into tax revenues, by jury-rigging the regulatory system instead, have enlarged the appetite of a monster that has been dormant for a long time

but is beginning to grow again. It could grow again when somebody else has a vision that costs money. In time, the process could begin to drag the whole system down.

The important question now is, not what should have been done at the beginning, but what can be done now to correct the situation without abandoning the Administration's vision of the Information Superhighway, and without destroying a key element of rural economies. The first thing that needs to be done is to form a reasoned consensus about how big the Universal Service Fund should be. The Joint Board began the process backward, when it recommended spending 2.25 billion dollars per year for schools and libraries before it, or anybody else, was able to estimate how much should also be spent on rural health institutions, poor people, or people living in rural areas. We need to start with a budget for the whole package, and then decide how to divide it among the targeted beneficiaries, in an open, public, and accountable process.

This kind of process need not necessarily lead to cuts in funding for schools, libraries, and health institutions, nor should it leave residents of rural areas without access to telecommunications. But it might lead to a reassessment of what minimally acceptable connectivity should mean. Today, for example, there are wireless technologies that could provide access at costs far below the amounts that telephone companies spend to extend wires to remote areas. Wireless service can support mobile telephony and vastly expanded calling areas, but it sometimes require a tradeoff in quality and available talk time. Would the tradeoffs be worth it? Perhaps not to users accustomed to unlimited subsidies, with no visible costs or consequences. In the real world, though, there are always costs and consequences and tradeoffs to be made. That is what most people do in their private interactions with the economy, and it is what we pay elected representatives to do.

The universal service program could use a fresh look from people with different perspectives, especially people who are accustomed to making tradeoffs. One way to do that would be to provide opportunities for review by the House Ways and Means Committee, the Senate Finance Committee, and the House and Senate Budget Committees, as well as the Commerce Committees—the traditional sources of FCC oversight. Whatever process is followed should make it possible for somebody to calculate a bill for every constituent, whether the funding comes out of taxes, phone bills, or some yet-to-be-imagined source of revenues. Members of the Commerce Committees may complain that such expanded oversight infringes upon their turf. The answer to those complaints can be simple and forthright: "You have been writing blank checks. If you don't want others looking over your shoulders, act responsibly."

Perhaps it is unrealistic to hope that such a process would do anything more than minimize harm; but, in the end, minimizing harm may suffice to achieve the Vice President's original vision. The competitive parts of the American telecommunications sector have displayed enormous vigor and creativity, and the Telecommunications Act of 1996, if properly implemented, can allow those qualities to express themselves in the local exchange, as it sheds the carapace of its monopolistic past. A fully competitive telecommunications sector will accomplish what government would fail to do if it tried: generate ideas and purposes that government could never imagine, and make them reality, as it has already begun to do with fax machines, telecommunicating computers, self-healing fiber rings, and the infant entity we call the Internet.

* Member, Dow, Lohnes & Albertson, P.L.L.C.; B.A., Yale University, 1971; M.A., Anneberg School of Communications, University of Pennsylvania, 1976; J.D., University of Virginia, 1978.

1. The Japanese have since delayed and softened their fibered-nation target and are beginning to place more reliance on competition to drive development of their telecommunications sector. How significant a role Albert Gore, Sr. actually played in the creation of the Interstate Highway System is irrelevant for purposes of this Article. What is relevant is that his son believed him to have played a significant role and saw that as setting a standard for accomplishment in his family.

2. As Senior Policy Adviser to the Assistant Secretary of Commerce for Communications and Information from 1989 through 1993, the Author was a participant in some of the Clinton Administration's early deliberations on communications policy issues. Having served in a prior Administration that had a self-admitted problem with "the vision thing," the Author intends no disrespect for campaign rhetoric. Rather, he views it as a necessary and important,

but not sufficient, part of the policy formation process. Except for incumbents running for re-election, candidates for public office rarely have access to the analytical resources that will become available to them after they are elected. For that reason, voters should both permit and encourage elected officials to re-examine and, if necessary, modify prior campaign proposals.

3. See President's Council on Competitiveness, *The Communications Revolution and Public Policy: Removing Barriers to Growth* 51 (Jan. 1993) [hereinafter *Competitiveness Council Report*] (prepared by Charles M. Oliver & James Gattuso with assistance from several federal agencies). The report was circulated internally among government offices and "concisely articulates the vision which . . . helped guide the Bush Administration's telecommunications policies over . . . four years." Letter of Transmittal from David M. McIntosh, Executive Director, Council on Competitiveness, to Sen. Trent Lott (Jan. 15, 1993).

4. In January of 1993, the FCC's price cap plan required LECs to reduce their rates subject to federal jurisdiction by 3.3% per year, after adjusting for "exogenous" variables like inflation. Deloitte & Touche estimated that setting federal and state price cap reduction targets at 2% per year, rather than 3.3%, and dedicating the 1.3% difference to infrastructure improvement could generate an investment pool of \$200 to \$400 billion by the year 2015. *Competitiveness Council Report*, *supra* note 3, at 51 (citing *Policy and Rules Concerning Rates for Dominant Carriers, Second Report and Order*, 5 FCC Rcd. 6786, 68 Rad. Reg. 2d (P & F) 226 (1990)). The price cap rules have since been substantially modified.

5. When properly implemented, radio license auctions can be an effective tool for encouraging economically efficient use of radio spectrum. What should be done with the proceeds is a separate issue. See Charles Oliver, *Domestic Spectrum Regulation in the United States*, in *Worldwide Wireless Communications* 135 (Frank S. Barnes et al. eds., 1995).

6. Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (codified in scattered sections of 47 U.S.C.A. (West Supp. 1997)).

7. For a summary of telecommunications provisions of the 1996 Act, see *infra* Part III.

8. See *supra* note 4.

9. See Amendment of Section 64.702 of the Comm'n's Rules and Regs. (Second Computer Inquiry), *Final Decision*, 77 F.C.C.2d 384, 47 Rad. Reg. 2d (P & F) 669, modified by *Memorandum Opinion and Order*, 84 F.C.C.2d 50, 48 Rad. Reg. (P & F) 1107 (1980), *aff'd and clarified by Memorandum Opinion and Order on Further Reconsideration*, 88 F.C.C.2d 512, 50 Rad. Reg. 2d (P & F) 629 (1981), *aff'd sub nom.* *Computer and Comm. Indus. Ass'n v. FCC*, 693 F.2d 198 (D.C. Cir. 1982).

10. For a more detailed discussion of the effect of competition on the deployment of high technology in the telecommunications industry, see *Competitiveness Council Report*, *supra* note 3, at 14-24.

11. For a discussion of the circumstances under which local exchange telephone companies may be exposed to, or shielded from, competition under the 1996 Act, see *infra* Part III.

12. For Bell Operating Companies (BOCs), the Act requires, at a minimum, that customers and competitors must be able to obtain, on a separate stand-alone basis: local loop transmission from the customer's premises to the nearest telephone switching office; local switching unbundled from transmission services; or trunk lines running between telephone company offices, unbundled from switching. The BOCs are also required to provide nondiscriminatory access to databases and associated signaling necessary for call routing and completion. Telecommunications Act of 1996, sec. 151(a), § 271(c)(2)(B), 47 U.S.C.A. § 271(c)(2)(B) (West Supp. 1997). Subject to exemptions for certain categories of carriers, ILECs are required to provide, for the facilities and equipment of any requesting telecommunications carrier, interconnection with the ILEC's network "at any technically feasible point." 47 U.S.C.A. § 251(c)(2).

13. Cable Television operators and electrical utilities may become exceptions to this rule as new technologies are developed, enabling them to provide telephone and data services over their existing facilities.
14. Use of the Carterfone Device in Message Toll Telephone Service, *Decision*, 13 F.C.C.2d 420, 13 Rad. Reg. 2d (P & F) 597, *reconsideration denied by Memorandum Opinion and Order*, 14 F.C.C.2d 571, 14 Rad. Reg. 2d (P & F) 185 (1968). The Carterfone was a device connecting mobile radio systems to the toll telephone network.
15. William Faulkner, *The Reivers* (1962).
16. 47 C.F.R. § 69.5(b) (1996).
17. *Id.* § 69.4(c).
18. *Id.* § 69.4(b). The introductory language of this section has been modified. 62 Fed. Reg. 31,932 (1997).
19. *WorldCom Tucks in—Again*, *The Economist*, Oct. 4, 1997, at 67.
20. 47 C.F.R. § 69.115(e)(4).
21. *Id.* § 69.115(e)(6).
22. *See* Clarification of §§ 69.5 and 69.115 of the Rules of the FCC, *Memorandum Opinion and Order*, 57 Rad. Reg. 2d (P & F) 1630 (1985).
23. The enhanced service provider exemption was embodied in 47 C.F.R. § 69.2(m) (1996), which for purposes of access charges defined an end user as any customer of an interstate or foreign telecommunications service that was not a carrier. Enhanced services are defined as services, offered over common carrier transmission facilities used in interstate communications, which employ computer processing applications that act on the format, content, code, protocol, or similar aspects of the subscriber's transmitted information; provide the subscriber additional, different, or restructured information; or involve subscriber interaction with stored information. The FCC does not classify enhanced service providers as common carriers. 47 C.F.R. § 64.702(a) (1996).
24. Amendments of Part 69 of the Comm'n's Rules Relating to Enhanced Serv. Providers, *Order*, 3 FCC Rcd. 2631, 64 Rad. Reg. 2d (P & F) 1294 (1988).
25. Telecommunications Act of 1996, Pub. L. No. 104-104, sec. 151(a), § 271, 47 U.S.C.A. § 271 (West Supp. 1997).
26. *Id.* § 273.
27. *Id.* § 251.
28. RBOC and BOC are often used as interchangeable terms. The enterprises are actually structured as regional holding companies, each owning several Bell Operating Companies.
29. *See, e.g.*, 47 U.S.C.A. § 251(a)-(e) (establishing interconnection requirements); *Id.* § 251(f) (authorizing state commissions to exempt certain rural telephone companies from some interconnection requirements).
30. *Id.* § 251(d).
31. *Id.* § 252(f)(2).
32. *Id.* § 252(e)(6).
33. *Lott Aims to Force Vote on FCC Nominees this Week*, *Comm. Daily*, Oct. 27, 1997, at 1.
34. 47 U.S.C.A. § 271(d).

35. *Id.* § 271(c)(2)(B).
36. *Compare id.*, with 47 U.S.C.A. § 251.
37. *Id.* § 271(d)(2).
38. *Id.* § 402.
39. *Id.* § 251(c)(2)-(4).
40. *Id.* § 271(c)(2)(B)(iv)-(vi).
41. *Id.* § 271(c)(2)(B)(x).
42. *Id.* § 251(c)(6).
43. *Id.* § 251(c)(4)(A).
44. *Id.* § 251(c)(4)(B).
45. *Id.* § 251(c)(5).
46. *Id.* § 251(f).
47. *Id.* § 271(c)(2)(B)(xi).
48. *Id.* § 271(c)(2)(B)(vii)-(viii).
49. *Id.* § 271(c)(2)(B)(iii).
50. *Id.* § 271(c)(2)(B)(xiii).
51. *Id.* § 251(a).
52. *Id.* § 153(a)(43) (defining telecommunications carriers as "providers of telecommunications services").
53. *Id.* § 153(a)(44) (defining telecommunications).
54. *Id.* § 271(b)(2).
55. *Id.* § 271(j).
56. *Id.* § 271(b)(3).
57. *Id.* § 271(g).
58. *Id.* § 271(d)(1).
59. *Id.* § 271(d)(3).
60. BOC representatives have expressed this view in private conversations with the author.
61. John Foster Dulles magnified his effectiveness as Secretary of State by convincing foreign enemies that he was sufficiently crazed to consider using hydrogen bombs as an instrument of foreign policy.
62. 47 U.S.C.A. § 272(a).

63. *Id.* § 275(a)(1).

64. *Id.* § 275(a)(2). The BOCs were allowed to offer alarm monitoring services beginning in 1991, and Ameritech purchased SecurityLink in December 1994. During hearings, Ameritech argued for grandfathering in order to develop this business opportunity and compete with LECs who may offer alarm services. *Communications Law Reform: Hearings on H.R. 1555 Before the Subcomm. on Telecomm. and Fin. of the Committee on Commerce*, 104th Cong. 140 (1995) (prepared statement of Richard H. Brown, Vice Chairman, Ameritech Corp.).

65. H.R. Conf. Rep. No. 104-458, at 151 (1996), *reprinted in* 1996 U.S.C.C.A.N. 124, 163-64.

66. *Id.*

67. *Id.* at 156, *reprinted in* 1996 U.S.C.C.A.N. 124, 169.

68. 47 U.S.C.A. § 274(g)(2).

69. *Id.* § 272(f)(1).

70. *Id.* § 272(f)(1)-(3).

71. *Id.* § 254(a)(1).

72. *Id.* § 254(a)(2).

73. *Id.* § 254(b)(3).

74. *Id.* § 254(h).

75. *Id.* § 254(b)(4).

76. CLECs affiliated with cable television operators or electrical utilities might eventually be capable of providing their own local loops. The key issue for them will be reciprocal compensation payments between CLECs and ILECs for terminating each other's traffic.

77. Access Charge Reform, Price Cap Performance Review for Local Exch. Carriers, *First Report and Order*, 7 Comm. Reg. (P & F) 1209, para. 50 (1997) [hereinafter *Access Reform First Report and Order*] (citing Usage of the Pub. Switched Network by Info. Serv. and Internet Access Providers, *Notice of Inquiry*, 12 FCC Rcd. 1210, 5 Comm. Reg. (P & F) 604 (1996)).

78. Chuck Ross, *Study: Web Users Watching Prime Time*, Advertising Age, Aug. 11, 1997, at 18.

79. Electronic Filing of Documents in Rulemaking Proceedings, *Notice of Proposed Rulemaking*, 12 FCC Rcd. 5150, para. 3 (1997).

80. Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, *First Report and Order*, 11 FCC Rcd. 15,499, para. 6, 4 Comm. Reg. (P & F) 1 (1996) [hereinafter *Local Competition First Report and Order*].

81. *Local Competition First Report and Order*, 11 FCC Rcd. 15,499, 4 Comm. Reg. (P & F) 1.

82. Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, *Second Report and Memorandum Opinion and Order*, 11 FCC Rcd. 19,392, 4 Comm. Reg. (P & F) 484 (1996). As discussed below, parties sought review of the *Local Competition First Report and Order* and obtained a stay of the Commission's pricing rules pending the court's decision on the merits.

83. *Local Competition First Report and Order*, 11 FCC Rcd. 15,499, 4 Comm. Reg. (P & F) 1.

84. *Id.* para. 696.
85. *Id.* paras. 672-700.
86. *Id.* para. 632.
87. *See* Modification of the Comm'n's Depreciation Prescription Practices as Applied to AT&T and the Prescription of Revised AT&T Depreciation Rates, *Memorandum Opinion and Order*, 4 FCC Rcd. 8567, para. 23, 67 Rad. Reg. 2d (P & F) 1 (1989); Policy and Rules Concerning Rates for Dominant Carriers, *Public Notice*, 4 FCC Rcd. 6814 (1989) (citing AT&T Press Release, Dec. 1, 1988, which announced a \$6.7 billion write-down of network analog equipment and related charges and acceleration of network digitization).
88. *Local Competition First Report and Order*, 11 FCC Rcd. 15,499, para. 657, 4 Comm. Reg. (P & F) 1.
89. *Id.* para. 639.
90. *Id.* paras. 620-22.
91. *Id.* paras. 672-732.
92. *Id.* para. 658 (citing USTA Comments).
93. *See id.* para. 71; *Iowa Utils. Bd. v. FCC*, 120 F.3d 753 (8th Cir. 1997).
94. *Local Competition First Report and Order*, 11 FCC Rcd. 15,499, para. 670, 4 Comm. Reg. (P & F) 1; *Iowa Utils. Bd.*, 120 F.3d 753.
95. *Iowa Utils. Bd. v. FCC*, 109 F.3d 418 (8th Cir.), *motion to vacate stay denied*, 117 S. Ct. 429 (1996).
96. Telecommunications Act of 1996, sec. 101(a), § 252, 47 U.S.C.A. § 252 (West Supp. 1997).
97. *Id.* § 252(b)(4)(C).
98. Charles Atlas, Associate Chief, FCC Common Carrier Bureau, Presentation at Dow, Lohnes & Albertson/George Washington University Seminar on the Telecommunications Act of 1996 (February 20, 1996) (notes of presentation on file with Author).
99. *Iowa Utils. Bd.*, 120 F.3d 753.
100. *Iowa Utils. Bd. v. FCC*, No. 96-3321, 1997 WL 658718 (8th Cir. Oct. 14, 1997).
101. Federal-State Joint Bd. on Universal Serv., *Recommended Decision*, 12 FCC Rcd. 87, paras. 438-630, 5 Comm. Reg. (P & F) 1 (1996), *amended and adopted by Report and Order*, 7 Comm. Reg. (P & F) 109 (1997).
102. *Id.* paras. 441-65.
103. *Id.* paras. 631-752.
104. Budget of the United States Government, Fiscal Year 1998 262 (1997).
105. Telecommunications Act of 1996, sec. 101(a), § 254(b)(7), 47 U.S.C.A. § 254(b)(7) (West Supp. 1997).
106. Federal-State Joint Bd. on Universal Serv., *Report and Order*, 7 Comm. Reg. (P & F) 109 (1997) [hereinafter *Universal Serv. Report and Order*].

107. *Id.* para. 853.

108. Changes to the Bd. of Dirs. of the Nat'l Exch. Carrier Ass'n., Inc. and Fed.-State Bd. on Universal Serv., *Report and Order and Second Order on Reconsideration*, 62 Fed. Reg. 41,294 (1997); Federal-State Bd. on Universal Serv. and Forward-Looking Mechanism for High Cost Support for Non-Rural LECs, *Further Notice of Proposed Rulemaking*, 62 Fed. Reg. 42,457 (1997).

109. The 1.6% figure is derived by dividing \$2.65 billion—the annual subsidy for schools, libraries, and rural health subsidy funds—by \$170 billion—the FCC staff's internal estimate of intrastate, interstate, and international retail revenues of U.S. telecommunications providers.

110. The 2.3% figure is derived by dividing \$1.5 billion—the approximate amount of existing federal explicit subsidies to high-cost telephone companies—by \$65 billion—the FCC staff's internal estimate of interstate-only gross retail revenues.

111. The 6% figure is derived by assuming that interstate ratepayers will provide 25% of the \$15 billion per year that might be required to subsidize service to high-cost areas served by the larger "nonrural" telephone companies (\$3.75 billion) plus \$.4 billion to continue existing subsidies to smaller "rural" telephone companies. The required funding would be produced by applying a 6% levy against \$65 billion, the FCC staff's estimate of gross interstate retail revenues of telecommunications providers.

112. This estimate assumes that states will be responsible for 75% of high-cost support, that total high-cost support requirements could be as high as \$15 billion per year, and that gross intrastate retail telecommunications revenues are about \$105 billion, according to internal FCC staff estimates. Multiplying \$105 billion by an 11% levy rate would produce \$11.25 billion, approximately 75% of a \$15 billion funding requirement. The levy rate would vary from state-to-state, and funding requirements will ultimately depend upon state estimates of funding requirements for service to high-cost areas.

113. As explained above, the FCC could apply a 6% levy against interstate retail revenues to support the federal share of high-cost area support, and, in addition, the FCC would apply a 1.6% levy against interstate and intrastate revenues to support subsidies to schools, libraries, and health service providers. The combined effect would be to produce a 7.6% levy against interstate revenues.

114. Adding 11%, the estimate explained above for state universal service levies, plus the FCC's 1.6% levy against interstate and intrastate revenues, would produce a combined levy rate against intrastate revenues of 12.6%.

115. *See Access Charge Reform, Price Cap Performance Review for Local Exch. Carriers, Notice of Proposed Rulemaking, Third Report and Order, and Notice of Inquiry*, 11 FCC Rcd. 21,354, 5 Comm. Reg. (P & F) 604 (1996).

116. *See Local Competition First Report and Order*, 11 FCC Rcd. 15,499, paras. 292-95, 337-38, 4 Comm. Reg. (P & F) 1 (1996).

117. *Access Reform First Report and Order*, 7 Comm. Reg. (P & F) 1209 (1997).

118. These per-minute payments included a "carrier common line charge" to cover the federal allocation of costs for wires connecting end user premises to telephone company switches. *See* 47 C.F.R. § 69.105 (1996).

119. *Universal Serv. Report and Order*, 7 Comm. Reg. (P & F) 109, paras. 844, 849, 852 (1997). The Commission says it will allow carriers the flexibility to decide how they should recover their percentage contributions from end users. *Id.* para. 853.

120. Herodotus, *The Histories* 647 (George Rawlinson trans., 1997).

121. Joseph & Frances Gies, *Life in a Medieval City* 149 (Harper & Row 1981) (1969).

122. The efficiency of the arbitrage process will be constrained by the decision of the Eighth Circuit Court of Appeals, on rehearing, to vacate an FCC rule that had blocked ILECs from disassembling network elements when CLECs ask them to refrain from doing so. *Iowa Utils. Bd. v. FCC*, No. 96-3321, 1997 WL 658718 (8th Cir. Oct. 14, 1997).
123. *Universal Serv. Report and Order*, 7 Comm. Reg. (P & F) 368 (statement of FCC Chairman Reed E. Hundt).
124. *See* MTS and WATS Market Structure, *Report and Order*, 2 FCC Rcd. 2953, paras. 4-6, 13, 30, 62 Rad. Reg. 2d (P & F) 1409 (1987).
125. Competitiveness Council Report, *supra* note 3, at 14 (citing FCC Common Carrier Bureau, Industry Analysis Division).
126. *See, e.g.*, Robert W. Crandall & Leonard Waverman, *Talk is Cheap: The Promise of Regulatory Reform in North American Telecommunications* (1995). Competition among carriers has been more intense in services provided to major consumers.
127. Competitiveness Council Report, *supra* note 3, at 14 (citing FCC Common Carrier Bureau, Industry Analysis Division). The amounts quoted are annualized subscriber line charges, which appear on end-user telephone bills and cover part of the federal share of subscriber line costs, which were previously covered in their entirety by per-minute carrier common line charges applied to IXCs. *See Access Reform First Report and Order*, 7 Comm. Reg. (P & F) 1209, para. 37 (1997).
128. The Senator related this story in a not-for-attribution conversation with the Author.