WHITE PAPER

RURAL AMERICA: CONNECTIONS TO THE FUTURE

The Telecommunications Act of 1996: Congress' New Vision for Universal Service for Rural America

by
Kathleen Wallman
President, Wallman Strategic Consulting, LLC
Former Chief of Staff of the National Economic Council and Deputy Assistant to the President for Economic Policy; Former Deputy Counsel to the President; Former Chief, Common Carrier Bureau, Federal Communications Commission

WHAT'S COVERED IN THIS WHITE PAPER

OPASTCO 21 Dupont Circle, NW • Suite 700 • Washington, DC 20036 • Phone 202.659.5990 • Fax 202.659.4619 • http//www.OPASTCO.org

TABLE OF CONTENTS

THE TELECOMMUNICATIONS ACT OF 1996:
CONGRESS' NEW VISION FOR UNIVERSAL SERVICE FOR RURAL AMERICA

FOREWORD

The preamble of the Telecommunications Act of 1996 is a succinct summary of the key challenge that Congress delegated to the Federal Communications Commission when it passed the law. The preamble describes the Act as:

AN ACT To promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies.

Bringing competition to all aspects of the telecommunications market is one important goal of the Act and one important mission entrusted to the FCC. But it is not the only goal and not the only mission. The hotly contested battles over competitive entry are not an end in and of themselves. The reason these battles are worth fighting, from a public policy perspective, is because if they are wisely and justly resolved, they will bring to "American telecommunications consumers" "lower prices," "higher quality services" and "new telecommunications technologies." Competition and deregulation will push the markets toward more innovation, and speed in delivering new products and services. The universal service provisions of the bill will promote the ubiquity of these benefits. This will improve lives in ways that are barely foreseeable. This was what impelled me to remain involved in telecommunications policy after leaving the government in the fall of 1997.

My commitment to the goals embraced in the preamble of the Act is an extension of my work in government both before and after the passage of the Act at the FCC, and in the White House. The approach of my consulting work has been to continue to pursue implementation of the '96 Act in a way that would lead to a modern universal service policy of better, faster, more accessible and more ubiquitous networks.

This paper is an example of that approach. It examines the universal service provisions of the Act and analyzes the Federal Communications Commission's implementation of them. I offer my assessment with great respect for the agency's work, even in those areas where I have concluded that the Commission's policy cuts would benefit from reevaluation. The FCC has already indicated that it is prepared to keep an open mind on some of these key issues, particularly as they affect small telephone companies that serve rural customers.

This open mindedness is extremely important. Implementing a modern universal service policy, while introducing competition, is a huge challenge. It needs to be confronted with an appreciation of the trade-offs that will be required. Universal service is fundamentally about moving telecommunications revenues around the system to cover costs and that does not occur in a competitive world on its own. It requires careful attention to the special cases that need to be solved – for example, high-cost assistance to small telephone companies. There is room to fulfill the Act's mandates and to treat special cases with the care they need and deserve, in order to make sure that the resulting policies of competition and universal service serve telecommunications consumers everywhere in the country.

There is still a tremendous amount of work ahead to make the Telecommunications Act of 1996 do what it is supposed to—which is so concisely summarized in its preamble. This paper aims to draw the debate toward wise resolution of the issues that are at the core of what Congress wanted the FCC to do: make the best networks in the world even better, and leave no part of the country or its people behind.

For decades before enactment of the Telecommunications Act of 1996, the Federal Communications Commission promulgated and administered a regime of universal service policies and rules based on the implied authority of a single phrase in the Communications Act of 1934. That phrase was prominently positioned in Section 1 of the 1934 Act, which described the purposes of the entire Act:

For the purpose of regulating interstate and foreign commerce in communications so as to make available, so far as possible, to all the people of the United States, without discrimination on the basis of race, color, religion, national origin, or sex, a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges.[1]

When Congress approved the Telecommunications Act of 1996, it gave explicit statutory content, expression and direction for the first time to the longstanding federal policy of universal service. Congress ratified some aspects of the federal policy, but gave the FCC fundamentally new instructions to follow and implement in other respects.

Congress articulated, for the first time, the principles that should guide national universal service policy. Section 254(b) sets forth the principles that are to guide the Commission in establishing policies for the preservation of universal service. These principles include that:

1. quality services should be available at just, reasonable and affordable rates;
2. access to advanced telecommunications and information services should be provided in all regions of the Nation;
3. consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high-cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas;
4. all providers of telecommunications services should make an equitable and non-discriminatory contribution to the preservation and advancement of universal service;
5. there should be specific, predictable and sufficient federal and state mechanisms to preserve and advance universal service; and,

---

1 The Telecommunications Act of 1996, Pub. L. No. 104-104, 47 U.S.C.A. 151 et seg. (1996).

6. elementary and secondary schools and classrooms, health care providers, and libraries should have access to advanced telecommunications services.

Congress' Actions

Congress ratified the FCC's policy of extending universal service support to rural and high-cost areas, directing the FCC in Section 254 of the Act to ensure "access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas."

But Congress also directed the FCC to administer universal service support in a fundamentally different way from past practice. Congress directed, in the Joint Explanatory Statement of the Committee of the Conference, that to the extent possible, "any support mechanisms continued or created under new Section 254 should be explicit, rather than implicit as many support mechanisms are today."[2]

Congress also authorized support for new universal service endeavors. It directed in Section 254 that "elementary and secondary schools and classrooms, health care providers, and libraries should have access to advanced telecommunications services."

Congress delegated to the Federal-State Joint Board on Universal Service and the FCC the responsibility of defining which services should be accorded universal service support, with general guidance about factors the Joint Board and the FCC should take into account in deciding which services to cover. But it recognized that universal service is a dynamic and evolving concept, and directed the FCC and the Joint Board periodically to review and update the definition of supported services to see not only to the "preservation" of universal service, but its "advancement" as well.

Making the policy decisions necessary to preserve and advance universal service at the cusp of the twenty-first century was by itself a challenging task to delegate to the FCC. Embedded in that task, even though not required by the words of the statute, were the necessities to reform and restructure access charges, because so much – although no one knows exactly how much – of the existing implicit support system is lodged in the current stream of access payments. Also necessary, as a practical matter, even though not required by the words of the statute, was a

---

2 United States House of Representatives, Conference Report - The Telecommunications Act of 1996. 10-458 (31 January 1996), S.652 at 131.

review of the separations regime. Looking at three such fundamental elements of the federal policy on networks would normally be more than a policymaker could expect to experience in the course of an entire career. But at the same time, Congress added new challenges and pressures to the smooth administration of a new universal service policy by embracing a new policy of competition in local service.

The purpose of this paper is to identify the major responsibilities delegated to the FCC to implement the goals that Congress articulated in the statute for universal service policy and to identify how the FCC has executed its delegated responsibilities as they affect rural customers served by small telephone companies.[3]

Taking the statute, the Joint Board's Recommended Decision and the FCC's May 8, 1997 order together, the following emerge as major policy areas in which FCC decisions affecting small rural telephone companies are required by the Act.

The Definition Of Universal Service:

Which network related services should be eligible for support, and what minimum core set of services should a carrier be required to offer in order to qualify for universal service support?

The Extent of Federal Support for Universal Service: Should the federal share of support be limited to 25 percent of what is needed to support universal service?

Congress added new challenges and pressures to the smooth administration of a new universal service policy by embracing a new policy of competition in local service.

Calculating What It "Costs" To Provide Supported Services: Should cost be calculated on the basis of forward-looking or actual costs? What should be the role of proxy cost models?

Competitive and Technological Neutrality: Who should be required to pay into the support mechanism? Who should be permitted to draw support?

Skimming the Cream: How can the FCC guard against efforts that will be unfriendly to universal service, such as new market entrants skimming off the highest margin parts of rural service areas?

---

3 The term small telephone companies is used here to mean companies that serve 50,000 or fewer access lines. This is consistent with the Act's definition of "rural telephone company," which includes companies with as many as 50,000 access lines. The Act defines "rural telephone company" as a local exchange carrier operating entity to the extent that such entity-

(A)provides common carrier service to any local exchange carrier study area that does not include either –

(i)any incorporated place of 10,000 inhabitants or more, or any part thereof, based on the most recently available population statistics of the Bureau of the Census; or

(ii)any territory, incorporated or unincorporated, included in an urbanized area, as defined by the Bureau of the Census as of August 10, 1993;

(B)provides telephone exchange service, including exchange access, to fewer than 50,000 access lines;

(C)provides telephone exchange service to any local exchange carrier study area with fewer than 100,000 access lines; or,

(D)has less than 15 percent of its access lines in communities of more than 50,000 on the date of enactment of the Telecommunications Act of 1996.

47 U.S.C. sec. 153(37).

The FCC's May 8 order addressed many of these subjects, but left open a number of important questions. Significantly, the FCC made a point of postponing conclusions on a number of important issues relating to small telephone companies that serve rural customers.

Thus, there is an important opportunity to continue to explore issues of particular concern to the customers of small rural telephone companies and to offer perspectives that may aid the FCC in reaching a reasonable and consensus-based result that conforms to the vision that Congress articulated — a future that ensures rural Americans modern connections to an evolving network that is increasingly indispensable to economic life in America and the rest of the world.

1. TWO THRESHOLD POLICY QUESTIONS ABOUT UNIVERSAL SERVICE SUPPORT FOR RURAL TELEPHONE CUSTOMERS

Lurking in the background of the debate about universal service support for rural customers are two threshold policy questions. Even advocates of rural development often push these questions to the back burner, as though straightforward debate about these questions, and answers to them, might underscore vulnerabilities to the case for universal service rather than help establish the case. But these questions deserve honest debate and thoughtful answers.

Do Rural Customers Deserve To Have Their Telephone Service Supported?

Some argue that rural living has its own compensations – cleaner air, less traffic congestion, lower incidence of crime, lower housing costs. They argue that there is no reason to underwrite the household costs of people who live there, whether by choice or necessity, for the higher costs of obtaining telephone service. There is no more reason to do that, the argument runs, than there is to compensate city dwellers, who live in urban areas, whether by choice or necessity, for higher housing costs.

Congress disagreed. In the 1996 Act, Congress rendered the fundamental judgment that the costs of networks serving customers in rural and high-cost areas should receive such support, ratifying and expanding the long commitment of the FCC and the states to universal service support for these goals.[4] Did Congress act merely out of sentimentality or out of concern for a political backlash from the most sparsely populated parts of the country?

No. Congress made the right policy choice; first, because of the traditional arguments about

4 Section 254 of the Act says "Consumers in all regions of the Nation, including those in rural, insular, and high-cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas"

network externalities that explain why a network becomes more valuable to all who use it proportionate to the number of people connected to it. But Congress also made the right policy choice because all Americans benefit when rural Americans are assured of having modern, ubiquitous connections. The networks of the future will make long distances transparent. It will no longer be necessary to live near a city or suburb in order to work with an institution located there. It will not be necessary to drive to a campus, or live on a campus, to attend courses there. On-line curricula already make this possible. Even though the availability of this option cannot replace the value that many find in the tradition of "going away to college," it is a valuable alternative for students whose circumstances make that option unavailable, and for students who wish to continue post-graduate coursework, but not full-time.

It is also an important gateway to life-long learning. This is becoming increasingly important for adults to be able to retrain themselves and update their skills, as career fields become less promising or obsolete, and as new opportunities become available. Driving sixty miles or more after work to learn these new skills may not be the most efficient or practical alternative for many adults.

Much of this is already possible, but the networks of the future will make all of this even more feasible because the eventual penetration of packet switched technology, to the point where it is pervasive, will fundamentally change the economics of distance in the network. The distance over which the information is transmitted and exchanged will become less and less important to the costs of the information transaction.

All Americans benefit when rural Americans are assured of having modern, ubiquitous connections.

The implications of these new capabilities of the network – to bring jobs, learning, medicine, shopping, entertainment and many other services to the places where people live, rather than demanding that the people come to the jobs and services – has enormous positive implications.

In the midst of debate about proposals on how to increase the supply of knowledgeable technology workers to meet a critical shortage in Silicon Valley, Virginia's Technology Corridor and elsewhere, networks that bring training and jobs to rural Americans can be part of the solution.[5] The Commerce Department's figures indicate that the US economy will generate demand for 1.3 million new information

---

5 "Higher Quota Urged for Immigrant Technology Workers," New York Times*, A18, Feb. 23, 1998.*

technology workers over the next ten years. This means, on average, nearly 140,000 new jobs in this sector each year for the next decade.[6]

It is sound economic policy, not just sound rural development policy, to support networks that pave the way to these eventualities. Nevertheless, some doubt the case for universal service support for networks to bring these jobs and services to rural areas. But when considered in terms of overall economic efficiency, and how much Americans would be willing to spend in the aggregate for socially desirable outcomes, it is far more efficient to invest in the telecommunications network than many other alternative outcomes. For example, it is more efficient to build a network that can bring telemedicine services to remote areas than to replicate advanced health care facilities in all the places that telemedicine can serve. It is far more efficient, and a much more durable investment, to build a network that allows teleworking from rural areas, rather than investing in surface infrastructure such as roads, bridges and public transportation. Investments in the network may obviate or postpone the need for new investments in surface transportation.

Investments in network infrastructure also may lead to a more efficient use of the American landmass. In the 1990 Census, 97.5 percent of the United States landmass was classified as rural, which is defined as places populated by less than 2,500 people. About 25 percent of Americans inhabit this rural part of our landmass. This means that 75 percent of Americans are packed into less than 3 percent of the landmass. Network technologies that afford Americans the choice of living away from densely populated areas can reduce commuting time, reduce the need for subsidized public transportation, reduce environmental pollution, and improve the quality of life not only for those who move to less densely populated areas, but also for those who choose to remain in cities and suburbs.

Additionally, some wonder why telephone networks should be supported at all, as if extending support to socially desirable goals is uncommon in the American experience. But public transportation is supported; medical research is supported; and, community colleges, state universities and public schools are supported. Some object that this is an unfair comparison because such support is funded from general revenues, but this is not entirely so. Gasoline taxes and airline ticket taxes, for example, support public infrastructure projects including public transportation. Public transportation is not

6 Remarks by FCC Chairman Kennard to Virginia High-Technology Partnership Program, Library of Virginia, Richmond, Virginia, Feb. 16, 1998.

broadly available in rural areas, but is, nevertheless, supported by rural taxpayers.

In any event, there is no reason to believe that a system based on general tax revenues would be better. Such a system would essentially run the same funds through the federal treasury and redistribute them as public works projects or grants or credits. Universal service funds would be subject to the vagaries of periodic budget battles, which would not lend the system the certainty that is conducive to efficient investment in infrastructure. Appropriations for universal service could become like appropriations for highway projects, which would not be a positive development, considering how contentious that process has become, and how it has come under criticism as a purveyor of "pork." Some might acknowledge that the appropriations process for highway construction and other infrastructure improvements is contentious and otherwise flawed, but argue that, in the end, things always work out and the needed funds are appropriated. They might argue that universal service expenditures would benefit from debate like that which precedes enactment of the highway legislation. But unless and until the appropriations process can give the system the relative stability and continuity it already enjoys, there is no reason to think that a system in which the needed funds are raised through general funds and allocated by appropriations would be superior to the current system.

The current system already attempts to balance, within the self-contained system of telephone revenues, the costs of service and the revenues generated by the system. A "fix" of moving the system to taxation and appropriation introduces risks that are inconsistent with the fundamental goal of universal service: ubiquitous, continuous access to the network for all Americans.

Public transportation is not broadly available in rural areas, but is, nevertheless, supported by rural taxpayers.

Is It Feasible To Maintain Total Bills For Rural Customers At Affordable Levels And Introduce Competition To Rural Areas?

The battles to implement the competition policy provisions of the Act have commanded enormous attention in the months since passage of the Act. But Congress accorded equal priority to competition policy and universal service policy in the Act. The story of competition infiltrating markets has always played out with competition arriving first in areas where the natural margins are highest and spreading gradually to lower margin markets. In local telephony, the highest margins are – unremarkably – found where the users are most densely clustered and where the volume of usage is highest.

This is why carriers seeking to compete with existing providers so far have targeted urban

areas and business markets. TCG, one of the maturest companies in the competitive service market, has deployed almost exclusively in urban areas. Teligent, one of the newest arrivals among publicly traded competitive providers, has announced a deployment plan that focuses on first- and second-tier cities.

Neither of these characteristics — high density of customers and high volume of usage — describes the places where most rural telephone customers live. This means that more time will be required before competition is attracted to these areas, although there is no uniformity of population density characteristics even within these areas. The location of a manufacturing or assembly plant in an otherwise sparsely populated area, or the loss of such a large user, can change the world entirely in a small company's study area. Everything is relative, so it is reasonable to expect that competition will be attracted to the most densely settled areas within areas that are less sparsely settled by comparison to suburban areas and cities. It is also reasonable to expect that high volume telecommunications customers in rural areas will be attractive targets for early competition. Small telephone companies that serve rural areas already have experienced this as interexchange companies have successfully attracted large users in their study areas away from switched access.

The FCC's focus on network policy decisions affecting rural and high-cost areas should take account of the extended time frames that will be required to make markets with the characteristics of rural and high-cost areas attractive to pervasive competition. It should also take account of the varying densities of telephone customers and varying densities of high volume users in rural areas. This may make parts of some rural service areas more attractive to new carriers sooner than other parts. The FCC needs to take account of the process by which new providers will find these areas and compete in them, and how they will affect the viability of the remaining market, as the incumbent's ability to spread and share costs throughout a study area becomes more limited.

Congress accorded equal priority to competition policy and universal service policy in the Act.

A further serious challenge that the FCC will have to face, beyond whether or not bills can be kept reasonable for rural customers of small telephone companies, is whether competition or the prospect of competition will adversely affect incentives to serve long-loop customers. A company, whether an incumbent or a new entrant, may be reluctant to do the construction necessary to extend a longer than average loop to a customer outside the town limits, if there is no certainty that the customers will remain a

customer long enough for the company to recoup the construction costs. Using state tariffs that permit a telephone company to obtain a customer's financial aid to construct facilities to reach the customer, telephone companies increasingly may seek to extract the costs of initial construction from the home developer or the premises owner who is seeking service. If payment of up-front costs by customers is an unacceptable outcome, the FCC will need to develop transition mechanisms that allow the telephone company that initially paid for the construction to recover these costs in a predictable, specific and sufficient way, over a reasonable period of time. If the FCC proceeds with its plan to make the support mechanisms for rural areas served by small telephone companies portable, this transition mechanism would need to be part of the FCC's plan.

2. A BRIEF REVIEW OF UNIVERSAL SERVICE SUPPORT MECHANISMS BEFORE THE ACT AND THE FCC'S MAY 8, 1997 ORDER

The Beginnings of Universal Service – The Separations and Settlements Process

A discussion of the pre-Act universal service mechanisms for rural, high-cost and insular areas usually starts with a review of the three major programs that the FCC has had in place to support universal service for those areas. But these programs do not really represent the origins of universal service policy. The real origins of universal service lie in the separations and settlements process that was analogous to the way that the old Bell System functioned internally. Payments among affiliates were accomplished by means of a "division of revenues" and with the independent companies that interconnected with the Bell System, payments were called "settlements."

The origins of the system are not in the nature of a tax, but rather in a policy of shifting revenues to meet the costs of operating the local exchange.

The division of revenues and settlement system was essentially an internalized system of payments that allocated a share of toll revenues to local exchange companies. The evolution of this process is described in a previous OPASTCO paper called, *Keeping Rural America Connected: How Public Policy Has Created and Preserved Universal Service* (1996). Another excellent treatment is found in Gerald Brock's book, *Telecommunication Policy for the Information Age* (1994).[7] Understanding the origins of the policy as an internal system of supports is essential for policymakers, particularly in the context of the

7 Chapters 5 and 10 of the Brock book are especially helpful on this topic.

running debate about whether or not universal service mechanisms are a tax. The origins of the system are not in the nature of a tax, but rather in a policy of shifting revenues to meet the costs of operating the local exchange. The effect of revenue shifting was to keep local rates lower than they would be otherwise.

Before implementation of the 1996 Act began, federal rules and policies supported universal service for customers of small telephone companies and other companies serving customers in rural and high-cost areas in a number of ways, particularly:

- the high-cost assistance fund, which is known as the Universal Service Fund, even though it is only one component of the system of universal service mechanisms;
- the Dial Equipment Minute (DEM) weighting program; and,
- Long Term Support (LTS).[8]

The jurisdictional separations rules currently assign 25 percent of every local telephone company's loop costs to the interstate jurisdiction, regardless of whether the loop is more or less expensive to provision and maintain than average. Additional amounts are shifted for local telephone companies with above-average loop costs and are supported via the high-cost assistance fund.

The high-cost assistance fund and LTS extend support to telephone companies serving customers in these areas by shifting recovery of a portion of network costs to interstate rates under the jurisdiction of federal regulators. The DEM program recognizes that providing interexchange service requires different and more expensive switching equipment than what would be required for serving the local exchange alone. Accordingly, the DEM program allows small companies to assign a greater proportion of switched minutes on the network to the interstate jurisdiction for recovery. The effect is to keep local rates relatively lower than they otherwise would be, by recovering those costs through interstate rates.

The Universal Service Fund

A local telephone company is eligible for high-cost assistance through the Universal Service Fund if its loop costs are in excess of 115 percent of the national average loop cost.[9] Local telephone companies with 200,000 or fewer loops

---

8 For a succinct summary of the universal service mechanisms that were in place before the passage of the Act, see OPASTCO's publication, Keeping Rural America Connected: How Public Policy Has Created and Preserved Universal Service.

9 In the Matter of Federal-State Joint Board on Universal Service - Report and Order, Common Carrier Docket No. 9645. 8 May 1997. The FCC's May 8 order said that the national average cost per loop based on year-end data for 1995 was $248.43, citing the Universal Service Fund 1996 Submission of 1995 Study Results by the National Exchange Carrier Association (filed Oct. 1,1996). The FCC noted that under then-existing rules a carrier's loop costs would have to exceed $285.69 per year or $23.81 per month in order to be eligible to receive high-cost support funding. Order at note 14.

in a "study area," which means a local telephone company's service territory within a state, receive a larger percentage of the difference between their own loop costs and the national average than do larger local telephone companies (more than 200,000 loops). Local telephone companies with study areas of 200,000 or fewer working loops receive, for each working loop, 65 percent of the cost per loop, including both interstate and intrastate costs, when costs are 115 percent to 150 percent of the national average cost per loop. Local telephone companies with fewer than 200,000 loops that have loop costs that exceed 150 percent of the national average receive an additional interstate allocation of 75 percent of the portion of the cost per loop that exceeds 150 percent of the national average. The sum effect of these policies has been that small carriers "receive a dollar from the interstate jurisdiction for each dollar of loop costs above 150 percent of the national average loop cost," (taking account of the initial 25 percent shift, and then adding the 75 percent available to carriers with costs above 150 percent).

For larger local telephone companies, with greater capability of spreading costs within their service territories, the allocation of support for above average loop costs has been distributed differently. Larger local telephone companies receive from the high-cost assistance fund 10 percent, rather than 65 percent, of costs between 115 percent and 160 percent of the national average, 30 percent of costs between 160 percent and 200 percent of the national average, 60 percent of costs between 200 percent and 250 percent of the national average, and 75 percent of costs in excess of 250 percent of the national average.

Dial Equipment Minute Weighting

Another universal service support mechanism, DEM weighting, supports switching costs for small telephone companies, and takes account of the increased overall and per unit switching costs incurred by smaller local exchange carriers to provide interexchange access. Providing interexchange access requires smaller carriers to buy switching features and functionalities over and above those that would otherwise be required solely for local service. In addition, small carriers have a smaller base of customers over which they are able to spread the costs of switch upgrades for deployment of new toll-free codes, new area codes, SS7, 4-digit carrier identification codes and equal access — all essential for

DEM weighting, supports switching costs for small telephone companies, and takes account of the increased overall and per unit switching costs incurred by smaller local exchange carriers to provide interexchange access.

interexchange access service. Carriers with fewer than 50,000 access lines are eligible for DEM weighting. This allows them to recognize a greater share of switching costs as interstate costs rather than intrastate costs.

Long Term Support

The third pre-Act support mechanism was LTS, for which carriers with above average loop costs who are members of the National Exchange Carrier Association (NECA) common line pool are eligible. NECA was founded at the time of the AT&T breakup in 1984 to handle some of the work that AT&T formerly did with respect to settlement payments to local exchange carriers, including small independent carriers. The LTS program, administered by NECA, collects funds from local telephone companies, who have exited the NECA common line pool, and distributes these funds to carriers who are members of the pool. This redistribution, which is a best efforts way of sending revenues to meet costs, ensures that these smaller member telephone companies need not charge their access customers, the long distance companies, a "carrier common line" charge (CCL) that is any higher than the national average. The CCL is the other half of the subscriber line charge (SLC) coin—both represent fixed costs of the local loop, which are higher for smaller, rural telephone companies, but the SLC appears as a flat, monthly charge on the customer's bill, while the CCL is passed through to interexchange carriers as interstate access charges and remains embedded in customer's interstate long distance rates.[10]

3. DEFINITION OF UNIVERSAL SERVICE: WHICH SERVICES SHOULD BE REGARDED AS UNIVERSAL AND WHICH ONES SHOULD BE SUPPORTED?

The Mandate of the Act

Section 254(a) directed the Joint Board and the FCC to conduct a proceeding to determine "the definition of the services that are supported by Federal universal service support mechanisms." Subsection (c) explained what factors the Joint Board and the FCC were to

---

10 The FCC's May 8 Order explains NECA's LTS support calculation, before it was altered by the FCC, as follows: Under the [then] current LTS support system, NECA annually projects the common line revenue . . . for ILECs that participate in the common line pool. NECA then calculates the average per-minute CCL charge that is charged by price cap ILECs, and projects the revenues that ILECs participating in the NECA pool would expect to collect by charging that average CCL rate. NECA then computes the total amount of LTS needed by subtracting the amount pooling carriers will receive in SLCs and CCL charges from the pool's projected revenue requirement. LTS is funded by ILECs that do not participate in the common line pool. Non-pooling ILECs' LTS contributions to the pool are set annually based on the total projected amount of LTS, converted to a monthly payment amount. The monthly payments received by the ILEC common line pool members are computed based on the pooling carriers' submissions to NECA of reported cost data (except for average schedule companies, whose monthly payments are based on average schedule data). As a result, each participating pool member does not receive an "LTS payment," but instead receives a payment from the "pooled" common line revenues. Non-pooling ILECs recover the LTS payments they make through their CCL charge to IXCs. Order at para. 213.

consider in deciding whether or not a particular service should receive universal service support. It directed the Joint Board and the Commission to "consider the extent to which telecommunications services" proposed to be included in the definition of universal service:

- are essential to education, public health, or public safety;
- have, through the operation of market choices by customers, been subscribed to by a substantial majority of residential customers;
- are being deployed in public telecommunications networks by telecommunications carriers; and,
- are consistent with the public interest, convenience and necessity.

Congress also directed that the definition should be updated periodically to take account of the evolving nature of universal service. The Conference Report explains that Congress recognized the need for flexibility so that the definition could be revisited to "take into account advances in telecommunications and information technology."[11]

The Commission's Decision

Based on the principles embodied in section 254, and consistent with the Joint Board's Recommended Decision, the Commission decided that the following services should be eligible for support:

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

The Commission declined to adopt proposals that would have broadened the list by specifying numerous other items, including high-speed data transmission, because they were concerned that supporting a more expansive "definition of core services could adversely affect all consumers by increasing the expense of the universal service program and, thus, increasing the basic cost of telecommunications services for all."[12] The FCC additionally concluded that these higher-speed

---

11 Conference Report at p.131

12 Order at para 64. The FCC also declined to adopt additional quality of service measurements. Order at paras. 98-102. The Commission decided to rely on data already available through the ARMIS reporting system covering price cap companies and on state quality of service programs. It will be important for the Commission to monitor this area to maintain confidence that the new universal service mechanism and the introduction of competition do not adversely affect quality of service.

digital services were not "necessary for the public health and safety" nor did a "substantial majority of residential customers currently subscribe to these services."[13]

At the same time, the Commission did not close the door on later expansion of the definition of core services to include high-speed transmission services. That openness is prudent: Sixty percent of the jobs available in the year 2000 will require skills in information technologies. In view of that eventuality, as one scholar has observed, "far too few Americans use a personal computer to access the Internet, remote databases, and Web sites for work, school, shopping or recreation."[14]

To ensure that rural Americans are enfranchised in this new future, it will be essential to keep the network that serves rural and high-cost areas functionally modern. The Joint Board and the Commission are not scheduled to review the definition of universal service until the year 2001. Congress directed that, on the occasion of that review, the Joint Board and the FCC should take into account the factors enumerated in the statute and such other factors as the Joint Board and the FCC deem appropriate.

The Next Time Around: A More Forward-Leaning Approach to Universal Service Policy

It is impossible to say what kind of network the Joint Board and the Commission might be looking at in three years. In retrospect, the rapid evolution of the Internet and its importance to telecommunications policy was not widely foreseen during the drafting, debate and passage of the 1996 Act. It is impossible to say how shifts toward the Internet network model, Internet Protocol telephony and packet switched networks will affect the topography of the network, the services provided over it, and the costs and pricing of those services.

It will be crucially important for the Joint Board and the Commission to conduct the next review with the broadest possible perspective on the networks, looking not just at services that are or could be provided over the networks, but at the performance capabilities of the networks. The Commission should not make the provision of higher-speed services a prerequisite to eligibility for universal service funding, but it should find a way to encourage and support the build-out of a network that supports such capabilities.

---

13 Order at para 64. The FCC's decision cited data demonstrating that .06 percent of residential connections are digital access lines, relying on definitions used in the Commission's ARMIS system that identify such lines as ones with capabilities of "64 Kbps or 56 Kbps or ISDN B channels or other equivalent communications channels."

14 U.S. Advisory Council on the National Information Infrastructure, Kickstart Initiative: Connecting America's Communities to the Information Superhighway, 1997.

To be sure, the statute requires the Commission, as the output of its review proceeding, to identify "telecommunications services" that should receive universal service support, as it has done in its original consideration of the issue.

But the Commission will be chasing the trailing edge of technology if it adheres indefinitely to the practice of ascertaining what most people already have and aiming its policy to ensure that more or less everyone in the country has it. The Commission would be better positioned if it construed or clarified, through Congress, its statutory authority to permit it to identify network performance capabilities rather than prescribing a list of services.

Section 706 of the Act may be the opportunity that the FCC needs to do this. Section 706 directs the Commission and each state commission to encourage the development of "advanced telecommunications capability to all Americans" by "utilizing, in a manner consistent with the public interest, convenience, and necessity, price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment."

Section 706 also directs the Commission to initiate, within 30 months of the date of the Act's enactment, "and regularly thereafter" a notice of inquiry "concerning the availability of advanced telecommunications capability to all Americans." One question that the FCC is expressly directed to take up in that process is "whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion." If the FCC finds that this is not happening, the Act directs it to "take immediate action to accelerate deployment of such capability by removing barriers to infrastructure investment and by promoting competition in the telecommunications market."

It will be crucially important for the Joint Board and the Commission to conduct the next review with the broadest possible perspective on the networks, looking not just at services that are or could be provided over the networks, but at the performance capabilities of the networks.

The FCC should explore the linkages between its mission in Section 254 and its mission under Section 706. The timing of the rulemaking required under Section 706 is not in synch with the review of universal service planned for 2001. But if the two reviews are undertaken with the common aim of ensuring modern connections for all Americans, the FCC will be that much closer to the vision that Congress articulated in the principles stated in Section 254. If the FCC follows this approach, it will also have a

headstart in fulfilling Congress' directive that the FCC should periodically update its definition of universal service in light of technological advances.[15]

The FCC also will need to explore what "advanced" services means and how to establish measurements of their deployment. The trick will be to create incentives for deployment without excluding from the support mechanism those customers in areas where deployment of advanced services may take longer to penetrate. The FCC also will need to decide whether deregulation or regulatory flexibility alone will work as sufficient incentives to achieve deployment of advanced services.

To be sure, the FCC will need to balance the costs of what will be needed to support networks in which the supported services are periodically redefined. The FCC will need to make sure that its universal service support mechanisms are constructed in a way that achieves consensus and avoids criticism as a gold-plated network. At every step of the way, the FCC will need to be prepared to work closely with key constituencies – Congress, no less than others – to ensure that there is consensus that the price of the support mechanisms is worth the aggregate benefits to all who use the network. As one scholar of modern networks observed:

In this context, the passage of the Telecommunications Act of 1996 comes at a critical point in time. It is a time pregnant with opportunity for substantial gain and fraught with the potential for irreversible loss.

Communications technology can be used to expand and equalize access to education and electronic political empowerment, or it can be used to disenfranchise the growing number of Americans who are at risk. It can be used to provide much needed efficiencies in service delivery and economic development to urban and rural communities, or it can be used to bypass and abandon them.[16]

4. THE EXTENT OF FEDERAL SUPPORT FOR UNIVERSAL SERVICE

The Mandate of the Act

The Act requires, in Section 254, universal support mechanisms that are "specific, predictable and sufficient." Nothing in the Act

---

15 There are other relevant thematic linkages, too. For example, if there are aspects of the regulations that might encourage cream skimming in rural areas, this could discourage broadband deployment in those areas. High volume users are the customers most likely to need and want high-speed network capabilities, and small telephone companies in rural areas likely will want to try to meet those needs. If new entrants, not encumbered by requirements that they offer service as broadly as the incumbent must do, can target these high-volume users, the regulations may create an unintended result that delays residential access to high-speed network services in rural areas.

16 Hammond. The Telecommunications Act of 1996: Codifying the Digital Divide, 50 Federal Communications Law Journal *179 (1997).*

or the legislative history indicates that Congress presupposed that this would entail a particular number of dollars, or that it authorized a particular formula by which the task of identifying sources of funds to foot the bill would be shared by the states and the federal government. The words of the statute indicate Congress' awareness only that there were coexistent federal and state programs to support universal service, and that state mechanisms could continue to exist after implementation of the Act, and that states should supplement their programs in a way that is consistent with the federal mechanism. But the statute gave the FCC the responsibility of ensuring that, at the end of the day, the federal universal service mechanism would adhere to all of the principles specified in the statute, including that the mechanism would be specific, predictable and sufficient to do the job.

The Commission's Decision

The Joint Board and the FCC had the difficult job of trying to balance the need for adequate support for core services with the public's willingness to pay for such support. As part of the task of making this judgment, the Commission had to decide the extent to which interstate plus intrastate revenues, as opposed to interstate revenues alone, would support universal service.

The statute gave the FCC the responsibility of ensuring that the federal universal service mechanism would be specific, predictable and sufficient to do the job.

Some states — including Alabama, California, Colorado, Georgia, Illinois, Iowa, Kansas, Kentucky, Maryland, Missouri, New York, and Utah – were understood by the FCC to be skeptical of the Commission's statutory authority to base contributions on intrastate revenues.[17] The Joint Board was divided on what to do, and ended up making no recommendation as to the funding base for rural, insular and high-cost support, or for low-income support. By contrast, the Joint Board did recommend, by a 6-2 vote, that support for schools, libraries and rural health care providers be collected from both interstate and intrastate revenues of all providers of interstate telecommunications services. Two Board members disagreed, stating that all schools, libraries and rural health care funding, all funding for rural, insular and high-cost areas and for service to low-income subscribers should be collected only from the interstate revenues of providers of interstate telecommunications services.

---

17 Statement of Chairman Reed Hundt on Universal Service Before the Committee on Commerce, Science and Transportation of the United States Senate, March 12, 1997.

The FCC decided in the end, after much public discussion, that although it had authority to tap intrastate revenues, it would not exercise the full measure of its authority in order to raise funds for high-cost support. It decided instead to rely only on the interstate revenues. By contrast, it did accept the Board's recommendation to exercise its authority to tap intrastate revenues in order to raise funds for the Act's new universal service mandate supporting telemedicine and connections to schools and libraries.

Given the diminished source of revenue available to support the federal universal service mechanism for rural and high-cost areas, the FCC went on to accept the Joint Board's recommendation to calculate universal service support by determining, with respect to non-rural carriers, the forward-looking cost of providing service per-line and then subtracting a national benchmark representing average revenues per line (with separate benchmarks calculated with respect to residential and business services). Thus, the level of support is determined by establishing a paradigmatic "cost" and determining on average how much of that cost the carrier could be expected to recover commercially. The shortfall, assuming the cost outstrips the revenue, would be the amount eligible for universal service support.

The FCC "concluded that the federal share of the difference between a carrier's forward-looking economic cost of providing supported services and the national benchmark will be 25 percent."[18] The 25 percent figure was derived from "the current interstate allocation factor applied to loop costs in the Part 36 separations process."[19] The states would therefore necessarily be responsible for supporting the remaining 75 percent of high-cost support for carriers within their boundaries. The FCC decided that the 25 percent federal figure was appropriate "because loop costs will be the predominant cost that varies between high-cost and non-high-cost areas."

A Welcome Reopening of the Issue

There is no sense in which the 25/75 federal/state split is required or even contemplated by the words of the statute. Unless it is compellingly justified, beyond the order's reasoning that it matches the jurisdictional split that applies to the local loop, it does not fulfill the mandate of the Act. The need to have a split at all is a pragmatic decision derived from the FCC's self-described discretionary decision to decline to tap intrastate revenues of telecommunications carriers that provide interstate services. The FCC's decision does not address whether or

18 Order at para 269.
19 Id.

not the FCC concluded that the 25/75 split will operate to fulfill Congress' mandate to ensure that the universal service mechanism is "specific, predictable and sufficient." Alternatively, if that conclusion is intended to be implicit in the decision to adopt a 25/75 split, the FCC's decision does not address how the split meets the statutory requirement.

The question left unanswered after the adoption of the May 8 order, and left pending since then, is how the FCC intends to make ends meet at the end of the day. If only 25 percent of the universal service support mechanism is to be funded through the federal jurisdiction, the states will be on their own to decide how to pay for the remaining 75 percent. The FCC apparently anticipates that the states will reconsider their intrastate access regimes and reduce access charges toward economic cost. It also seems to anticipate that the amounts of the reduction will be used to fund explicit universal service mechanisms – that the amounts taken out of access charges will become part of the universal service mechanism.[20]

If this works, great, but the exercise could have a different outcome if state regulators decide that the access reductions should not be retargeted to universal service, but rather should be passed through to consumers. If the exercise results in lower net revenues for small companies serving rural telephone customers, the likely result will be increased local service rates for these customers as the companies that serve them look for new ways to cover costs. No matter how state regulators choose to go about the task, the pressure on state commissions in states whose receipts will decrease under the 25/75 approach will be enormous as they try to make ends meet.

The question left unanswered is how the FCC intends to make ends meet.

Chairman Kennard reopened the issue in a significant way in his February 1998 speech before the National Association of State Utility Consumer Advocates (NASUCA).[21] He offered a set of eight principles "[t]o help move the debate forward." His eight principles, offered together as a package, were:

- Universal service reform should not reduce the amount of explicit support that the state receives from the interstate jurisdiction. By this, I mean that costs that previously had

20 Many knowledgeable people have looked at the funding issue to suggest ways to resolve it and what the total impact on telephone customers might be. A good overview of these efforts is available in Distance, Speed, and Infrastructure: Delivering Universal Service, Telecommunications Reports International, *No. 3 (Dec. 1997). The issue contains thoughtful pieces by Commissioner Bob Rowe of Montana, Carol Weinhaus, and a State Ad Hoc Working Group, whose driving force has been Joel Shiffman of the staff of the Maine Public Utilities Commission.*

21 Remarks by Chairman Kennard to the National Association of State Utility Consumer Advocates, February 9, 1998, available at www.fcc.gov.

been borne by the interstate jurisdiction because of the old high-cost fund should continue to be borne by federal universal service mechanisms.[22]

- States have an obligation to take all reasonable steps as promptly as possible to reform existing intrastate universal service support mechanisms to make them compatible with competitive local markets by making the subsidies explicit and portable.
- States should continue to collect as much of what is currently intrastate universal service support (whether implicit or explicit) from within their own state.
- Where a state has fully reformed its own universal service mechanisms and would be collecting as much of what is currently intrastate universal service support as is possible, additional federal universal service support should be provided to any high-cost areas where state mechanisms in combination with baseline federal support, are not sufficient to maintain rates at affordable levels.
- Federal universal service support should be the minimum necessary to achieve statutory goals.
- Federal and state universal service support mechanisms should collect contributions in a competitively neutral manner.
- Federal and state universal service support mechanisms should encourage efficient investment in new plants and technologies by all eligible telecommunications carriers.
- Federal and state universal service support mechanisms should promote service to historically underserved areas – Native American nations, for example.

If the exercise results in lower net revenues for small companies serving rural telephone customers, the likely result will be increased local service rates for these customers as the companies that serve them look for new ways to cover costs.

The unifying theme of these principles is that there should be no retreat from existing levels of universal service support – neither from the federal jurisdiction nor from the state jurisdiction. Further, the principles imply that there should be flexibility on the possibility of an additional federal contribution toward universal service beyond existing levels and beyond the 25 percent share outlined in the May 8 order, once a

22 Chairman Kennard did not mention DEM weighting in his remarks, but maintaining old levels of support would require the same principles to be applied to DEM weighting as well as the high-cost fund.

particular state has exhausted its ability to make funds available for universal service support.

5. COMPETITIVE AND TECHNOLOGICAL NEUTRALITY: WHO SHOULD BE REQUIRED TO PAY INTO THE FUND? WHO SHOULD BE PERMITTED TO DRAW OUT OF THE FUND?

Who Should be Required to Pay into the Mechanism?

The Mandate of the Act

Section 254(b)(4) establishes the principle that all providers of "telecommunications services" should make "an equitable and nondiscriminatory contribution to the preservation and advancement of universal service." This has spawned hot debate about which providers in the universal service constellation provide "telecommunications services," and nowhere has the debate been hotter than with respect to whether Internet Service Providers (ISPs) are providing such services, or whether what they do constitutes "information services." If the latter, then the statute would appear to excuse them from having to make contributions to the universal service support mechanism.

The Commission's Decision

ISPs have not been treated as telecommunications carriers under the FCC's rules; so far, they have been treated as end users or providers of enhanced services and have not been required to pay access charges or universal service contributions. ISPs argue that their incipient operations require continued treatment along these lines. They embrace the FCC's conclusion in its May 8 order that ISPs offer an "information service" that the Act defines as "the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunication but does not include any use of any such capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service." The FCC concluded that "the definition of enhanced services" historically employed by the FCC "is substantially similar to the definition of information services," and that the rules and exemptions that applied to enhanced services should apply to providers of information services.[23]

The FCC declined to follow reasoning offered by the office of Senator Stevens to support a contrary result. The Senator's office urged that information services are telecommunications services because information services are offered

23 Order at para 788.

via "telecommunications." The FCC disagreed, observing that "ISPs alter the format of information through computer processing applications such as protocol conversion and interaction with stored data, although the statutory definition of telecommunications only includes transmissions that do not alter the form or content of the information sent. When a subscriber obtains a connection to an Internet service provider via voice grade access to the public switched network, that connection is a telecommunications service and is distinguishable from the Internet service provider's service offering." [24]

The FCC's conclusion on this point, that ISPs need not make contributions to the universal service support mechanism, was put into high relief by its decision that ISPs were eligible to draw support from the universal service mechanism. The FCC decided that Internet access was a service for which discounts will be available under the schools and libraries program, reasoning that the statute authorized the FCC to make the discounts available for "other services," not just telecommunications services, and not just to eligible carriers.

Even as it reached these conclusions, the FCC recognized that the entire area needs to be reexamined: "The classification of information services, and especially Internet-based services, raises many complicated and overlapping issues, with implications far beyond section 254. We agree with the Joint Board that we should re-evaluate which services qualify as information services in a separate proceeding in which we take into account changes in technology and the regulatory environment." The FCC decided to take up those issues in its Notice of Inquiry on the treatment of Internet access and other information services that use the public switched network.[25]

In fact, the FCC was required to furnish a preliminary answer on the issue even sooner than such an inquiry could be completed. In legislation passed near the end of 1997, Congress directed the FCC to report to Congress in writing on the implementation of the universal service provisions of the Act in April 1998. The FCC accumulated a comment docket and an en banc record full of contentious comments on both sides of the issue, and on April 10, 1998, the Commission filed its report to Congress.

The report addressed the issue of whether or not certain Internet-based services might fall within the statutory definition of telecommunications and thus be required to contribute to the universal service mechanism. The Commission

24 Order at para 789-790.
25 Order at para. 790.

stated that certain "phone-to-phone IP telephony" services bear characteristics of "telecommunications services," but declined to make any "definitive pronouncements in the absence of a more complete record focused on individual service offerings."[26] However, the Commission said "to the extent we conclude that certain forms of phone-to-phone IP telephony are 'telecommunications,' and to the extent that providers of such services are offering those services directly to the public for a fee, those providers would be "telecommunications carriers."[27] The import of this is that these providers would fall within the Act's mandatory requirement to contribute to the universal service mechanisms. To exclude them, the Commission said, would provide an incentive for carriers to modify networks to shift traffic to an Internet protocol and escape paying into the universal service fund.

Commissioner Harold Furchtgott-Roth, in a dissenting statement, disagreed with the Commission's assessment that Internet protocol (IP) telephony should subject the provider to contributing to universal service mechanisms. His concern was that the majority's plans for IP telephony regulation would not be technically feasible and would have a serious detrimental effect on the nation's international telecommunications agenda. He believed that competitive neutrality considerations should urge the Commission to deregulate the regulated industries before the Commission – not regulate unregulated industries that would otherwise not even be before the Commission. Furthermore, he stated that "this report is not a call for this agency to slap its old regulations on new technologies, but rather – as a matter of utmost urgency – to reevaluate seriously its universal service policies to meet all legal, policy and technical requirements."

The growth of the Internet is one of the most significant developments to visit telecommunications policy in many years.

The Internet: A New Paradigm for Telecommunications Policy

The growth of the Internet is one of the most significant developments to visit telecommunications policy in many years. Its advent is more than a different way of thinking about the current network in the way that the breakup of AT&T required policymakers to develop new

26 In the Matter of Federal-State Joint Board on Universal Service, CC Docket No. 96-45, Report to Congress, April 10, 1998, para. 83.
27 Id. at para. 98.

regulatory concepts to meet the new reality of a two-part telephone industry. The Internet is much more than that; it may mean a paradigm shift for the telecommunications networks and for telecommunications policy.

Some of what the Internet does and can do closely resembles capabilities and services of the public switched network. Lurking in the wings for the last several years has been the necessity of deciding how telecommunications policy can ensure fair treatment of the Internet vis-a-vis existing providers of like services without hobbling the development of the Internet.

It has been a strongly held tenet of the Clinton Administration and the FCC to steer clear of regulation of the Internet in any way that could burden its development because the Internet has been viewed as an engine of economic development and job growth here and abroad. It likely will remain so.

Nevertheless, there remains a serious debate about whether or not Internet traffic should be subjected to access charges, and whether or not Internet revenues should be subjected to universal service assessments. There is a strong awareness that as long as there is an opportunity to arbitrage the price differences between the Internet – currently free of these assessments – and the public switched network, there will be a strong incentive for traffic to bypass the public switched network, as much as is possible, and for the Internet to grow, drawing even more traffic into bypass. The impact of the bypass will be more on interexchange service providers than on local exchange providers, but the potentially large adverse impact on universal service funding makes the issue a valid concern for all segments of the industry. It also reinforces the urgency of developing a universal service mechanism that provides for rational cost recovery within the confines of the system of network costs and revenues.

The issue currently is in flux as the FCC and Congress consider what the Act intended on these points. It likely will remain in flux for a while yet, although the FCC has indicated a preliminary view in its April 1998 report to Congress on universal service that Internet protocol voice traffic should be subject to universal service assessments. This paper does not attempt to resolve the issue; only to sketch out the competing arguments and suggest where they may lead.

One scenario would be to impose access charges and universal service assessments on the Internet and eliminate the opportunity for arbitrage and the incentive for bypass. The arguments for doing this are:

- ISPs are not merely end users of telecommunications services, they are providers of a

service that is itself "telecommunications," and as such, they meet the definition of entities that should be making universal service contributions and paying access charges.

- Fair's fair; if ISPs are going to use the public switched network to provide access to their networks, they are operating just like interexchange companies that have to pay access charges.
- Fair's fair in another sense: If ISPs are going to provide services such as voice telephony that are indistinguishable in kind (if not in quality) from those offered on the public switched network, then they should be assessed the same access charges and universal service contributions.
- Fair's fair one more time: ISPs' customers use the network longer each time they connect, and have a tendency to try, try, try again if they meet busy signals at the ISP server. This use of the network costs something more than ISPs are paying as end users, and they should pay their fair share to reflect this.

The other side of these arguments suggest a different scenario for the future:

- The Internet is so new a phenomenon that the old definitions, even ones adopted as recently as 1996, do not fit or capture what it can do. This debate should not be decided by old definitions; it should not be decided at all within the frame of reference that captures the existing public switched network. The Internet is a paradigm shift, and these questions should be debated in that framework, not in the old one.
- The opportunity for arbitrage and bypass is real because the way that the Internet has evolved makes it a cheaper way to send and share certain kinds of information, especially data. But many pro-consumer, pro-competitive advances in telecommunications have started out as arbitrage and bypass – MCI's competitive long distance service, for example; policymakers should not hobble the new entrant simply because it is a cheaper alternative to existing services.
- The argument that voice over Internet Protocol raises fairness issues is less than meets the eye.
- First, why should an alternative that is cheaper than existing options be hobbled? This is the same as saying that because e-mail, another Internet application, bypasses the Post Office, every e-mail sender should be subject to a 32-cent levy.
- Second, voice over IP is not just an Internet offering. IP allows purveyors of the public switched network to begin transmitting voice and data traffic the same way that the Internet now transmits and exchanges data.

So even as purveyors of the public switched network are calling for new regulatory requirements for the Internet, they are moving toward a network model that imitates the Internet. This would seem to diminish the equity argument.

- To the extent that users of the Internet initiate their use by means of the public switched network, it is reasonable to look at the patterns and intensity of usage, and to make sure that the usage is properly paid for. But the current regime of access charges may not be at all reflective of those costs and probably is not. Before deciding that these charges should apply to ISPs, a careful examination of the actual costs should ensue. In the meantime, the opportunities for arbitrage and bypass offered by the Internet will keep downward pressure on access charges, and ISPs will continue to look for technologies that will allow them to disburden the public switched network of Internet traffic. This is in their interest – the congestion frustrates the ISP's customers.

It is too early to say which of these two scenarios will prevail: whether the Internet will adopt the model of costs and pricing of the telephone networks, or whether the telephone networks will adopt the model of costs and pricing of the Internet. But the Internet has several advantages that suggest that adoption of the Internet has the edge. The Internet model has the advantage of simplicity. It also has been assiduously sheltered from state and federal regulation as to pricing.

Further, as telephone networks become increasingly digitalized and more reliant on packet-switching, it will become easier for telephone networks to adopt the Internet model and drive the unit price of long distance traffic down. Packetized data transmitted on the local loop, which will permit more intensive use of the circuit, may also drive down unit costs for local traffic, although the basic cost of providing a dedicated circuit to a home or business likely will remain about the same.

It is too early to say which of these two scenarios will prevail: whether the Internet will adopt the model of costs and pricing of the telephone networks, or whether the telephone networks will adopt the model of costs and pricing of the Internet.

In addition, as computer prices continue to move downward past $1,000, home computers will become increasingly ubiquitous, and the demand for Internet access will increase. More and more telephone companies will become ISPs, particularly those in rural areas that can make their service more attractive by offering local service that allows customers to avoid long distance charges for Internet access.

Short-term solutions that manage these transitions – whereby telephone companies become ISPs, and telephone networks become more and more like the Internet — by adding to the regulatory burden, and costs of doing business may waste an opportunity to make a fresh start in the relationship between regulation and telephone companies, and between regulation and investment incentives. In other words, as the future unfolds, local telephone companies will become ISPs and interexchange carriers (IXCs), and ISPs will become local telephone companies and IXCs. Rounding things out, IXCs will become ISPs and local telephone companies. Even those companies that do not take affirmative steps to "become" something else will find that technology pushes them toward network architectures that make long distances irrelevant to pricing and service, and will make telephony indistinguishable from Internet services. It would be curious, in this frame of reference, to lasso the Internet with just the sort of regulation that everyone would like to escape.

Who Should Be Permitted to Draw Out of the Fund?

The Mandate of the Act

Section 254(e) provides that, after the effective date of the Commission's regulations implementing section 254, "only an eligible telecommunications carrier designated under section 214(e) shall be eligible to receive specific Federal universal service support."[28]

Section 214(e)(1) provides that: A common carrier designated as an eligible telecommunications carrier under [subsection 214(e)(2)] or [subsection 214(e)(3)] shall be eligible to receive universal service support in accordance with section 254 and shall, throughout the service area for which the designation is received—

- offer the services that are supported by Federal universal service support mechanisms under section 254(c), either using its own facilities or a combination of its own facilities and resale of another carrier's services (including the services offered by another eligible telecommunications carrier); and,
- advertise the availability of such services and the charges therefore using media of general distribution.

The Commission's Decision

The FCC decided, consistent with the Joint Board's recommendation, to adopt the statutory criteria contained in section 214(e)(1) as the rules for determining whether a telecommunica-

28 47 U.S.C. sec. 254(e).

tions carrier is eligible to receive universal service support. But the FCC construed the requirement of Section 214 that an eligible carrier provide service over its "own" facilities to allow such a carrier to use unbundled elements purchased from the existing telephone company. The FCC determined that such unbundled elements could constitute that new carrier's "own" facilities for purposes of determining eligibility for universal service support.

The FCC concluded that Congress did not intend to allow pure resellers of the existing telephone company's facilities to receive universal service support. But it read the statute to mean that Congress intended to allow a new entrant who provides service entirely over unbundled elements, or even over a combination of unbundled elements and resold services, to receive universal service support.

The FCC decided to interpret the term "facilities" in section 214(e)(1) to mean any physical components of the telecommunications network that are used in the transmission or routing of the services designated for support under section 254(c)(1). The FCC concluded that its "adoption of this interpretation strikes a reasonable balance between adopting a more expansive definition of 'facilities,' which would undermine the Joint Board's recommendation to exclude from eligibility a carrier offering universal service exclusively through resold services, and adopting a more restrictive definition of 'facilities,'" which the FCC feared would "thwart competitive entry into high-cost areas."

The FCC reasoned that a company that obtains unbundled elements "owns" them in the sense that the unbundled elements are converted to the lessee's exclusive use for the term of the contract. It concluded that a company that resells a carrier's services has not purchased "facilities" and therefore would not be as well situated as the unbundled element lessee as an "owner" of those facilities, even though the resale contract would be equally firm and enforceable as the contract for unbundled elements. In all events, the words of the statute, which refer to a carrier's "own facilities or a combination of its own facilities and resale of another carrier's services," indicates that the statute intends to treat resale as something different from facilities that a carrier owns.

Who Owns What?

The FCC's decision reflects that it intended to strike a compromise between, on the one hand, restricting universal service support eligibility to facilities based new entrants and, on the other hand, opening up eligibility to companies seeking to enter the market based solely on a resale business plan.

Its decision reflects attention to the appropriate concern that the support mechanism not be tapped for double payment of universal service support. But more than that, its construction of the term "own" facilities apparently intends to reflect Congress' judgment, outlined in Section 251, that new entrants should be able to enter the market not only by building their own facilities, but through unbundled access and through resale. If Congress envisioned that a company could start a new business by leasing unbundled elements, the FCC reasoned that company should not be disqualified from receiving universal service support.

The evidence is that Congress intended to make it relatively easy to qualify as an eligible carrier, so the FCC's construction of Section 214 to bring it into line with the policy of Section 251 may be what Congress would have intended. But the natural construction of the phrase "own facilities" is something different from where the FCC came out, and since there is no express explanatory material in the legislative history, the FCC could usefully seek clarification of this part of the statute from Congress.

Seeking clarification is important because of the consequences of the FCC's decision for incentives for new entrants to compete selectively to serve the highest-volume customers in a study area. Skimming the cream is a natural inclination in open competitive markets, but is a problem when regulations give the new entrant an economic advantage over the incumbent.

Skimming the cream is a natural inclination in open competitive markets, but is a problem when regulations give the new entrant an economic advantage over the incumbent.

6. SKIMMING THE CREAM

The Mandate of the Act

Section 214 of the Act provides that "[i]n the case of an area served by a rural telephone company, 'service area' means such company's 'study area' unless and until the Commission and the States, after taking into account the recommendations of a Federal-State Joint Board instituted under section 410(c), establish a different definition of service area for such company." The Act thus established a presumption that the areas served by small telephone companies serving rural customers would serve as the service area that a newcomer would have to agree to serve in order to be eligible for universal service support.

The Commission's Decision

The FCC agreed with the Joint Board that the

order should retain the study areas of rural telephone companies as the rural service areas in order to comply with section 214(e)(5) and the policies of section 254. Underlying the FCC's conclusion, and the Joint Board's recommendation, was the notion that "if competitors, as a condition of eligibility, must provide services throughout a rural telephone company's study area, the competitors will not be able to target only the customers that are the least expensive to serve and thus undercut the ILEC's ability to provide service throughout the area." The FCC also concluded that this approach was "consistent with [the] decision to use a rural ILEC's embedded costs to determine, at least initially, that company's costs of providing universal service, because rural telephone companies currently average such costs at the study-area level."[29]

A Finer Level of Granularity

Congress' approach to rural service areas so far has furnished a reasonable way to protect against cream skimming beyond what small telephone companies serving rural areas already have experienced with respect to bypass of switched access. But new entrants will have every incentive to find the highest margin parts of the service area and start the process of petitioning the state commissions and the FCC for exemptions pursuant to section 214 that will allow them to redefine smaller, more profitable service areas. The incentive to do so is heightened by the FCC's decision to count unbundled network elements, obtained by a new entrant from the incumbent, as the new entrant's "own facilities," and the statutory language making a carrier eligible for universal service if it offers services over a combination of its own facilities and resold facilities. This means that a new entrant could build its own facilities to serve the most lucrative parts of the market, and serve the rest of the study area by means of resold facilities. Alternatively, the new entrant could serve the most lucrative area by means of unbundled elements obtained from the incumbent, and the rest of the study area via resold facilities, or it could serve the entire area via unbundled network elements. Unless these incentives are counterbalanced, this trend could compromise service to the highest cost areas as the incumbents' market share in the most lucrative parts of their study areas is eroded by competition.

What will be needed to anticipate this problem and to head it off will be a universal service support mechanism that allows disaggregation of

29 Order at para. 189.

universal service payment calculations so that the actual costs of providing service in more or less dense population bands of a rural service territory can be identified. Only in this way will it be possible to send the market the right signals about efficient entry in rural areas. Alternatively, regulators will be confronted with the need for upward pricing flexibility for the longest loops.

If the FCC adopts this approach, as Chairman Kennard has indicated it will,[30] it will also validate the hesitancy it has had so far to adopt forward-looking costs or proxy cost models to small telephone companies that serve rural service areas. It is difficult to see how the FCC could simultaneously move toward finer granularity in identifying costs of providing service within different parts of a service territory and move toward implementing a system of proxy costs and hypothetical costs.

7. CALCULATING WHAT IT "COSTS" TO PROVIDE SUPPORTED SERVICES, AND CALCULATING THE LEVEL OF SUPPORT THAT SHOULD BE PROVIDED

The Mandate of the Act

The Act directs the state and federal policy-makers to ensure that universal service support mechanisms are specific, predictable and sufficient. Nothing in the Act or its legislative history requires the use of a particular method for calculating costs. Nothing in the Act dictates that the FCC must decide to fund universal service at a particular dollar level. Nothing in the Act dictates that the FCC must calculate the level of support by a particular formula. So the FCC had, subject to the outcome-oriented instruction of ensuring that the support mechanisms were specific, predictable, sufficient and explicit, considerable latitude to decide how to go about the task.

It is difficult to see how the FCC could simultaneously move toward finer granularity in identifying costs of providing service within different parts of a service territory and move toward implementing a system of proxy costs and hypothetical costs.

The Commission's Decision

The Joint Board determined that using forward looking costs was appropriate because "[t]hose costs best approximate the costs that would be incurred by an efficient competitor entering that market." The Joint Board continued, "[w]e believe that support should be based on the cost of an efficient carrier and should not be used to

30 Remarks by William Kennard, Chairman, Federal Communications Commission to OPASTCO, January 12, 1998, "Keeping America Connected" available at www.fcc.gov/Speeches/Kennard.

offset the costs of inefficient provision of service, or costs associated with services that are not included in our definition of supported services, such as private lines, interexchange services, and video services."[31] The FCC agreed with this analysis and adopted it in its own order. In addition to the stated rationale, based on the reasonable assumption that a new entrant would try to start business in a new market with the most efficient technology and network plan, the use of forward-looking costs had the advantage of keeping the overall universal service support mechanism more affordable. This was a concern that weighed on the Joint Board members and the FCC.

Figuring out how to calculate costs for purposes of the universal service support mechanism is of enormous consequence because of the method that the FCC adopted to calculate the level of support per eligible line. The FCC's approach calls for it to —

- Calculate a nationwide benchmark of revenues per line separately for residential and business lines.
- Calculate forward-looking costs of providing service.
- Subtract revenues from costs to figure out what amount will need to be supported by universal service payments.

Getting these calculations right is important not only on the face of the exercise and on its own terms, but because of the reality that networks in rural areas are not built a line at a time. Investment decisions are made on a more aggregated basis and, so, it is important not only to get the calculations right on a per-line basis, but also to make sure that they add up in a way that provides the right incentives for investment in the network.

The Use Of Forward-Looking Costs: Is The Approach Right For All Parts Of The Network?

The FCC had two main alternatives available to it concerning how to calculate costs.

First, it could have used embedded, or historical, costs, which essentially takes the network as it exists and calculates the actual costs of providing service. The argument for calculating the cost of providing service in this way has the appeal of common sense, and is economically logical because average price must work out to equal average cost over the long run. In fact, the FCC decided that for the foreseeable future, using embedded costs was the only sensible approach for small rural telephone companies, and went further than the Joint Board recommended in postponing the possible

31 Joint Board Recommended Decision, para. 270.

transition to a different methodology. The Joint Board had recommended that the FCC set a specific schedule for the rural carriers' cut-over to proxy cost model support calculation, beginning on January 1, 2001, and ending three years later. The FCC declined to adopt the schedule for the transition; it decided to review the suitability of available cost models for small rural telephone companies and determine an appropriate schedule after such review. Meanwhile, calculations for support from the existing high-cost fund, DEM weighting, and LTS programs continue to be calculated, based on historical cost for small telephone companies serving rural customers.

But the FCC also decided that eventually, after further work and study, its reliance on embedded costs for rural telephone companies would yield to a more hypothetical, rather than actual cost, approach that relies on forward-looking costs. This means that the cost of providing service is deemed to be what it would cost a new provider to come in and build a comparable network based on currently available technology, which has been presumed to be less expensive and more efficient than the existing network as it has been built over the years.[32]

But in the real world, existing networks have many "holdover" components that are not the most modern and efficient, because they still work fine for the purposes for which they are used, and there has been no reason to replace them.[33]

If the hypothetical forward-looking cost method has these limitations, why would the FCC want to move away from a historic cost approach and toward the hypothetical approach? The main shortcomings of the historic cost approach are seen as follows:

- It commits universal service support to the network as it now exists, with whatever decisions the telephone company made—whether good or bad, and often at the direction of the regulators—along the way about investments in the network.
- Some argue that it commits universal service support in a way that essentially guarantees telephone companies that whatever they spend, they will recoup. Such cost-plus approaches to telecommunications policy are

---

32 Not everyone agrees with this presumption. In a paper called High Cost Support: An Alternative Distribution Proposal, prepared by the NARUC Ad Hoc Working Group on Funding for High Cost Areas, it is asserted that "in some areas of the country it may be that forward-looking costs are higher than embedded costs." (page 16) The paper continued: Higher forward-looking costs might be found, for example, in an area that has largely depreciated its existing loop plant of buried copper wire. Because labor costs and copper costs have not necessarily depreciated, construction of replacement plant could have a significantly higher forward-looking cost. An Alternative Distribution Proposal at pages 16-17.

33 State and federal depreciation schedules are another manifestation of this problem. In many cases, they do not allow depreciation of assets quickly enough to reflect reality, which means that cost recovery is unrealistically low.

out of favor because they are thought not to provide incentives to control costs.

- It is thought to send the wrong information to providers who wish to enter the market to compete. If universal service is provided based on the actual costs of the historic network, the new entrant will have skewed incentives to build an efficient network – why build it as economically as possible when universal service support will make up the difference between prices and a much higher level of actual costs than the new provider is incurring? Or, the new entrant, if it does build a low-cost, efficient network, will be overcompensated by a payment that is calculated on the basis of the existing network.
- It is feared that it will require a higher overall level of universal service payments, because the costs of providing service over the "historic" existing network may be higher than the costs of providing comparable service over the hypothetical forward looking cost network.

The FCC intends to use forward-looking costs in a number of areas where the '96 Act has delegated decisions to it. It has implemented this approach in some areas, such as interconnection, and the momentum toward adopting it in other contexts is powerful. It is part and parcel of the FCC's plan for overcoming bottleneck facilities and jump starting competition in local exchange markets. For example, local exchange carriers, including the Regional Bell Operating Companies (RBOCs) must allow new entrants to use parts of their networks, together or separately, to offer competing local telephone service. Certain rural telephone companies are eligible for an exemption from the interconnection requirements. For local exchange carriers that are subject to the requirements, those parts of the network, or network elements, are priced under the FCC's rules at forward-looking cost, not historic cost. It could be inconvenient to have different methods of calculating costs for different purposes in the Act, but there is no statutory reason to demand adherence to symmetry. The forward-looking cost methodology can remain a strong and valuable tool for jump starting competition in RBOC markets while affording the FCC the flexibility to take account of the different, slimmer economics of the markets where rural telephone customers are served by small companies.

There is room within the vision that Congress articulated for the FCC to adhere for the foreseeable future to the historic cost approach for small companies that serve rural customers. Such an approach would be consistent with the

scheme of the Act, which accorded equal priority to universal service policy and competition policy, and would be no hindrance to competition for so long as there is no indication that the rural local carrier is in fact operating as a bottleneck that prevents willing new entrants from entering the market. Or, if a more concrete measure is needed, the FCC could allow historic costs to prevail for so long as the exemption for rural carriers subsection of Section 251 remains operative. That section essentially acknowledges the fundamentally different economics of rural carriers, and authorizes state commissions to excuse companies serving rural customers from the obligation to interconnect with new entrants.[34] In all events, it is crucial that the change be introduced through a carefully thought out transition plan so as to introduce the change smoothly to rural customers of small companies.

Any move away from historic toward hypothetical costs should take into account the long history of decisions that small telephone companies that serve rural customers and state and federal regulators made together, or that rural telephone companies implemented at the direction of, or with the assent of, state or federal regulators. As the FCC considers whether or not, when, and how to move from historic costs to hypothetical costs for telephone companies serving rural customers, it needs to consider these historic decisions and the historic relationships between investment and regulation. Should it move decisively toward the hypothetical cost model, it will need to be prepared to discuss how historic costs owed to the historic relationship between investment and regulation will be accounted for through embedded or stranded cost recovery.

Any move away from historic toward hypothetical costs should take into account the long history of decisions that small telephone companies that serve rural customers and state and federal regulators made together, or that rural telephone companies implemented at the direction of, or with the assent of, state or federal regulators.

The Use Of Proxy Models: Is There A Better Way?

Historically, universal service support has been accorded on the basis of companies' actual costs. This is laborious for the FCC and for NECA insofar as the FCC has delegated some of the study functions to it. The FCC has also been concerned about the size of the universal service mechanism and about some of the perverse incentives that the FCC believes the current

34 The move to phase in forward-looking costs for rural carriers could meet itself coming and going: the Alliance for Public Technology, a non-profit organization that promotes public policy aiming to provide ubiquitous, high-speed connections for communities across America, recently filed a petition arguing that forward-looking pricing should be phased out for network elements in order to provide the right incentives to build a broadband network.

system may set up. To address these issues, the FCC has been wrestling with the development of a proxy model that will process variable inputs concerning the factors that drive the cost of telephone service — distance from the central office, terrain, etc. — and determine a "proxy" of the forward looking cost for providing such service. With the use of a proxy model, costs on which universal service payments are based will be drawn away from what it actually costs to provide service and toward what it "should" cost to provide service.

The magnitude of this exercise has been enormous. It has taken many months for the FCC to come close to the point of refining the models to be useful for large LECs, although even there not without controversy. Meanwhile, the Joint Board recommended, and the FCC agreed, that the proxy models needed more work and study. The FCC decided that the models could be made ready for the large telephone companies to implement by the beginning of 1999, but that they would not be ready for small companies that serve rural telephone customers in the foreseeable future. The Joint Board said in this connection that

"*The proposed proxy models' designs do not reflect the special characteristics of these [rural] carriers. First, none of the models adequately represents the costs for rural carriers as all the models are currently based on expense data for large LECs, serving predominantly urban areas. Second, small carriers, with their limited revenue streams, will be significantly affected if the model does not accurately reflect the carriers' costs. Third, the proxy models should be refined and modified to reflect the special characteristics of rural carriers before requiring those carriers to move to a proxy model for determining universal service support.*"[35]

The urgency of the switch to proxy cost models for small companies that serve rural customers is an open question. The FCC should consider what the likely trajectory of competition in rural areas really is and take that timeline into account in deciding how quickly it needs to shift rural telephone companies from the existing method that takes account of actual costs. The FCC must take the time that reality affords to work through these issues.

The FCC should consider the inherent limitations of a proxy model system as it may apply to small telephone companies. An inaccuracy in a proxy cost model will hit a small company particularly hard because small companies have a smaller number of lines over which to spread the inaccuracy. A bias in the model that underesti-

35 Joint Board Recommended Decision, para. 271.

mates costs with respect to one type of geography is less likely to be compensated for within the study area of a small company with relatively homogeneous geography.

The FCC should consider the possibility of continuing studies of small telephone companies' actual costs, with some possible modifications to address concerns it has articulated during the course of its study of proxy models. If there are concerns about the continued feasibility of individual studies of small telephone companies' actual costs, then the FCC could consider basing cost determinations on aggregated data about the actual costs of similarly situated small telephone companies that serve rural customers. If there are concerns about whether relying on historical costs will not provide a proper incentive to modernize the network, then the FCC could consider a two-part approach that bases cost determinations in part on the embedded costs of today's network, and in part on forward-looking costs as newer and more modern network elements are incorporated into the networks on a gradual schedule over time. This "going forward, forward-looking cost approach" could blend the goals of the FCC to send the "right" market signals and control the cost of universal service with the reality of small companies' rural operations.

Where To Go From Here: Taking More Time — But Not Too Much Time — on Rural Policy Decisions

So far, the FCC has taken reasonably cautious steps to forestall the application of forward-looking costs and proxy cost models to small companies that serve rural telephone customers. But there are numerous important issues that still need to be resolved to put the universal service issue on the footing that Congress envisioned in the Act. The overarching issue that profoundly affects all of the sub-issues under its umbrella is the size of the fund and how responsibility for payments to it will be handled by and among federal and state regulators.

The FCC's apparent openness to reconsider the 25/75 split will contribute to a reasonable and cooperative resolution of the issue by reducing tension around the issue of whether or not there will be enough support in the system to sustain current levels of service and plan for the ubiquitous, modern network that Congress envisioned.[36] It will also support federal-state cooperation around these issues.

Chairman Kennard's openness on another front is an important step, too. He indicated in a speech in April 1998 that he saw no reason to treat the transition for small rural telephone

36 Chairman Kennard's speech did not refer to DEM weighting, and the general reference to the 25/75 split would not seem to cover it, but his general openness to reconsideration of the responsibility to provide for a sufficient, predictable and specific universal service mechanism would seem to extend to it.

companies as subject to a set deadline; this is a step in the right direction. It needs to be embraced by the rest of the Commission and ratified, in principle, by the Federal-State Joint Board on Universal Service in order to settle expectations and concerns in this area.

The FCC's policymaking process on issues that affect small telephone companies that serve rural customers now has the benefit of two overlapping windows of opportunity: the one created by the Commission's expressions of openness to reconsidering the 25/75 split, and the one created by the FCC's prudence in postponing final decisions on cost issues for small telephone companies that serve rural customers. If the FCC remains open to considering the fundamentally different ways in which small telephone companies that serve rural customers are affected by hypothetical and proxy model approaches to universal service support calculations, there is still room for a reasonable outcome that applies Congress' vision to the real world.

8. CONCLUSION

The FCC has a significant amount of work still ahead of it to complete its statutory responsibilities with respect to universal service. As it refines its past work and completes the rest of its universal service mission, it is important that the FCC treat rural issues as mainstream issues, and that it take into account the particular challenges that small telephone companies face in serving rural customers. There is still time and room in the process for the FCC to adjust its previous decisions to ensure fulfillment of the statute's universal service mandate in a way that is fully consistent with the Act's mandates on competition.

At the same time, it is important that these issues not be left on hold too long because the policy decisions that the FCC needs to make will affect investment incentives and investment decisions for small companies that serve rural customers. The FCC's decisions must be both timely and wise in order for it to fulfill the overarching directive of the 1996 Act that "access to advanced telecommunications and information services should be provided in all regions of the Nation."

Bibliography

Brock, Gerald. *Telecommunication Policy for the Information Age: From Monopoly to Competition*. Boston: Harvard University Press, 1994.

Distance, Speed, and Infrastructure: Delivering Universal Service. *Telecommunications Reports International* 1:3, December 1997.

Hammond, Allan. "The Telecommunications Act of 1996: Codifying the Digital Divide." *Federal Communications Law Journal* 50:179 (1997).

Hundt, Reed. "Testimony Before the United States Senate Committee on Commerce, Science and Transportation." Washington, DC. 12 March 1997. (www.fcc.gov)

In the Matter of Federal-State Joint Board on Universal Service - Recommended Decision, Common Carrier Docket No. 96-45, 8 November 1998.

In the Matter of Federal-State Joint Board on Universal Service - Report and Order, Common Carrier Docket No. 96-45. 8 May 1997.

Kennard, William. "Keeping America Connected." OPASTCO Convention, Fort Lauderdale, FL. 12 January 1998. (www.fcc.gov).

Kennard, William. "Remarks to the National Association of State Utility Consumer Advocates." Washington, DC. 9 February 1998. (www.fcc.gov).

Kennard, William. "Remarks to Virginia High-Technology Partnership Program." Richmond, VA. 16 February 1998. (www.fcc.gov)

Kickstart Initiative: Connecting America's Communities to the Information Superhighway. U.S. Advisory Council on the National Information Infrastructure. Washington, DC, 1997.

NARUC Ad Hoc Working Group on Funding for High Cost Areas, "High Cost Support: An Alternative Distribution Proposal." *Telecommunications Reports International* 1:3, December 1997.

O'Rourke, Jill. *Keeping Rural America Connected: How Public Policy Has Created and Preserved Universal Service*. Washington, DC, OPASTCO 1995.

Pear, Robert. "Higher Quota Urged for Immigrant Technology Workers." *New York Times*, 23 February 1998: A18.

The Telecommunications Act of 1996, Pub. L. No. 104-104, 47 U.S.C.A. 151 et seq. (1996).

United States House of Representatives, Conference Report - The Telecommunications Act of 1996. 10-458 (31 January 1996).

Glossary of Telephony Terms

A

Access - Access is the ability to enter or connect to the telecommunications network. There are two types of access—switched access, by which calls are switched to and carried via available facilities, and special access , by which calls are carried via dedicated facilities. Access is originating when it is for access to the network of the local exchange carrier (LEC) serving the location where the call originates and is terminating when it is for access of the LEC serving the location where the call terminates.

Access charge - Local exchange carriers' (LECs) customers, both telephone subscribers and interexchange carriers (IXCs) , pay LEC access charges for connection to the LECs' networks. The telephone subscribers pay a monthly subscriber line charge , while IXCs pay usage-based access charges. The access charges IXCs pay include carrier common line charges and traffic-sensitive charges.

Access line - The circuit connecting the subscriber's premises to the local exchange carrier's (LEC) switching center. Generally, a LEC's number of access lines is approximately its number of subscribers.

Average schedule formulas - A set of formulas for determining the interstate settlements of those small local exchange carriers (LECs) that 1) participate in access pools administered by the National Exchange Carrier Association (NECA) , and 2) do not conduct a detailed cost study , which shows the costs of providing telephone service. Because cost studies are expensive, some small LECs opt to simulate cost study results by using average schedule formulas instead. The results of these simulations are used to calculate interstate settlements. NECA developed the average schedule and revises them annually.

B

Bell operating companies (BOCs) - Prior to divestiture, AT&T owned both long distance and local telephone operations. When the court divested AT&T of its local telephone operations, it divided those operations into 22 BOCs, which were grouped into seven regional holding companies (RHCs) . (Sometimes the RHCs are referred to as regional Bell operating companies or RBOCs.) Many of the RHCs have since ceased using the individual BOC names and are now offering local telephone service under their RHC name. At divestiture, however, the RHCs and their respective BOCs were as follows:

Ameritech - Illinois Bell, Indiana Bell, Michigan Bell, Ohio Bell,
Wisconsin Bell

Bell Atlantic - Chesapeake & Potomac (C&P) Telephone companies of the District of Columbia, Maryland, Virginia, and West Virginia; Diamond State Telephone; New Jersey Bell; Bell of Pennsylvania

BellSouth - South Central Bell, Southern Bell

NYNEX - New England Telephone, New York Telephone Company

Pacific Telesis - Pacific Bell, Nevada Bell

Southwestern Bell - Southwestern Bell

U S West - Mountain Bell, Northwestern Bell, Pacific Northwest Bell

There are two other companies— Cincinnati Bell and Southern New England Telephone—that were licensees of but never wholly owned by AT&T, so there were and remain independents.

Bypass - Using facilities other than those provided by the local exchange carrier (LEC) for access to the telecommunications network.

C

Carrier common line (CCL) - One type of usage-based access charge that interexchange carriers (IXCs) pay local exchange carriers (LECs). The CCL charge covers a portion of LECs fixed or non-traffic-sensitive costs of providing access. The National Exchange Carrier Association (NECA) files a CCL tariff on behalf of those LECs participating in its common line pool.

Central office - The building or location that houses the equipment that local exchange carriers (LECs) use to switch calls.

Common line - The pool that the National Exchange Carrier Association (NECA) administers for its local exchange carrier (LEC) members' non-traffic-sensitive costs of providing interstate access.

Cost study - An annual study by local exchange carriers (LECs) that 1) participate in National Exchange Carrier Association (NECA) pools , and 2) do not use NECA's average schedule formulas . Cost studies provide detailed information on how much LECs spend in order to provide telephone service. Cost study results are used to calculate interstate settlements.

D

Deaveraging - Abandonment of the current telephone industry practice of charging for toll calls based on distance, not on the relative cost of carrying a call to a specific destination. The cost of carrying a call to a high-volume location is generally lower than carrying a call to a sparsely populated area, but rates are uniform due to geographic rate averaging. Deaveraging would result in higher rates to contact low-volume areas.

Dial equipment minutes (DEM) - The number of minutes a local exchange carrier's (LEC) switch is used for handling calls; as of 1993, DEM is the factor used to allocate local switching investment between the inter- and intrastate jurisdictions.

E

Elements - The various components of the access charges that local exchange carriers (LEC) charge to interexchange carriers (IXCs) . Among the primary access elements are charges for switching calls, transporting calls and directory assistance.

Equal access - A technology by which subscribers gain

access to multiple interexchange carriers (IXCs) from which to choose for long distance service.

Exchange - Generally the area served by one local exchange carrier (LEC) central office .

F

Federal Communications Commission (FCC) - An independent U.S. government agency, responsible directly to Congress, established by the Communications Act of 1934 and charged with regulating interstate and international communications by radio, television, wire, satellite and cable. Intrastate services are under the jurisdiction of state public utility commissions.

Federal-State Joint Board - A body formed when regulatory issues have implications for both the inter- and intrastate jurisdictions. A joint board usually consists of three Federal Communications Commission commissioners and four state public utility commissions. Presently, a Federal-State Joint Board exists to resolve universal service issues.

G

Geographically averaged/geographic averaging - see deaveraging.

H

Holding company - A parent company that owns one or more local exchange carriers (LECs) .

I

Independent - A local exchange carrier (LEC) that never was part of the former Bell System.

Interexchange carrier (IXC) - A carrier providing long distance telephone service between local access and transport (LA TAs). (In some areas, IXCs are allowed to compete for carriage of intraLATA toll calls.)

InterLA TA - see local access and transport area (LA TA).

IntraLA TA - see local access and transport area (LA TA).

L

Lifeline - A federal program that reduces the monthly bills of qualified subscribers by paying the $3.50 monthly subscriber line charge (SLC) to a local exchange carrier (LEC). States can establish their own programs to provide additional assistance up to a maximum of $7.00 per month, with the approval of the Federal Communications Commission (FCC) .

Link-up America - A federal program that provides a reduced installation charge with deferred payment for qualified subscribers. States can establish their own programs to provide additional assistance, with the approval of the Federal Communications Commission (FCC) .

Local access and transport area (LA TA) - At divestiture, the U.S. District Court divided the United States into LATAs. These areas, based on central office service areas at divestiture, established boundaries for the Bell operating companies' (BOCs) carriage of toll calls. Because the Modified Final Judgment (MFJ) stated that the BOCs cannot provide interexchange services, they are permitted to carry toll calls only within LATAs (intraLATA calls). Interexchange carriers (IXCs) have to carry calls between LATAs (interLATA calls). In some areas, however, IXCs are allowed to compete for carriage of intraLATA toll calls. Although independent local exchange carriers (LECs) are not subject to the MFJ interLATA restriction, most independents' territories do fall within a specific LATA.

Local exchange carriers (LECs) - A local telephone company. LECs include both Bell operating companies and independent telephone companies.

Long term support (LTS) - Contributions from LECs (local exchange carriers) that no longer are members of the National Exchange Carrier Association (NECA) common line (CL) pool that allow the remaining CL pool members to charge interexchange carriers (IXCs) a carrier common line rate equal to what that rate would be if all LECs remained in the pool. NECA calculates each non-pooling LEC's LTS obligations.

Local loop/loop - The communications channel between a subscriber and the local exchange carrier (LEC) central office from which the subscriber's service is provided. Loop costs are the LEC's costs of installing and maintaining the local loop plant.

M

Minute of use (MOU) - The measurement, in minutes, of the time a local exchange carrier's (LEC) network or equipment is in use. Interexchange carriers (IXCs) pay access charges to local exchange carriers (LECs) based on the number of minutes that the IXC uses the LEC's network to terminate or originate long distance calls.

N

National Exchange Carrier Association (NECA) - An organization created by the Federal Communications Commission in 1984 to file interstate access tariffs on behalf of local exchange carriers (LECs) and to manage the various access revenue pools. On a temporary basis, NECA also collects and distributes monies for the Universal Service Fund and the Lifeline Program . This responsibility will be taken over by NECA's subsidiary, the Universal Service Administrative Company , in the near future.

Non-traffic sensitive (NTS) - Costs, incurred by local exchange carriers (LECs) providing telephone service, that are not affected by usage or the amount of traffic carried over the network.

Originating - see access.

P

Plant - The equipment used by a carrier in providing telecommunications service.

Pool/pooling - A payment system under which revenues collected by local exchange carriers (LECs) are not kept, but instead are combined and redistributed based on factors

such as LECs' costs of providing service. There are various state pools, as well as the interstate pools administered by the National Exchange Carrier Association (NECA) . At the end of the monthly pooling process, each participating LEC either owes monies to the pool or is due monies from the pool. NECA collects the monies due and distributes it to members who are recipients. Immediately after divestiture, all carriers participated in the NECA pool, but after April 1989, carriers were given the option to withdraw from the pools and file their own common carrier line (CCL) and/or traffic sensitive (TS) tariffs .

Price caps - A form of federal regulation of local exchange carrier (LEC) earnings that basically sets a ceiling or cap on the prices LECs can charge for their interstate services and provides incentives for LECs to be more efficient. Although price cap regulation is mandatory for large LECs, it is optional for small LECs. Realizing that most small LECs would not find price caps beneficial, the Federal Communications Commission in 1993 adopted two additional alternatives for small LECs—rate of return and average schedule —to move toward a form of incentive regulation.

R

Rate-of-return - A form of federal regulation of local exchange carrier (LEC) earnings that establishes the percentage of net profit that a LEC is allowed to earn on its rate base (its total invested capital). Currently, LECs are permitted to earn an 11.25 percent interstate rate-of-return.

Regional holding company (RHC) - see Bell operating company (BOC) .

Revenue requirement - The amount a rate-of-return local exchange carrier (LEC) can recover from interstate tariff charges. It provides for expenses, taxes, and a return on investment at the authorized rate-or-return .

S

Settlements - The compensation a local exchange carrier (LEC) receives from a pool or other revenue sharing agreement.

Special access - see access.

Study area - A geographic segment of a local exchange carrier's (LEC) operations, generally the LEC's operations within a state. Thus a LEC that operates in a single state has one study area, while a LEC operating in more than one state typically has a study area for each state. For jurisdictional separations purposes, the Federal Communications Commission (FCC) froze study area boundaries in November 1984. Carriers wishing to change their study area boundaries can request a waiver of the applicable FCC rule.

Subscriber line charge (SLC) - The monthly access charge that subscribers pay to local exchange carriers (LECs) . The SLC is a maximum of $3.50 for residential and single-line business subscribers and $6 for multi-line business subscribers.

Switched access - see access.

T

Tariff - The document in which carriers—both local exchange carriers (LECs) and interexchange carriers (IXCs) —set forth the charges for their services and the terms under which the services are provided. Tariffs for interstate services are filed with the Federal Communications Commission (FCC) and those for intrastate services are filed with state public utility commissions.

Terminating - see access.

Toll - Calls for which subscribers incur a charge because the location called is outside their local service calling area. Toll calls can be intrastate or interstate calls, but the interstate toll calls are often referred to as long distance calls.

Traffic-sensitive (TS) - Costs, incurred by local exchange carriers (LECs) providing telephone service, that are determined based on usage and the amount of traffic carried over the network.

U

Universal service - The concept, included in the Communications Act of 1934, that all subscribers—both urban and rural—are entitled to quality telephone service at reasonable rates. Specially, the act says "...to make available, so far as possible, to all the people of the United States, a rapid, efficient, Nation-wide, and world-wide wire and radio communications service with adequate facilities at reasonable charges."

Universal Service Fund (USF) - A federal program that pays support to those local exchange carriers (LECs) whose costs of providing basic telephone service are higher than the national average so that they may charge their subscribers reasonable local service rates. The USF accomplishes this by allowing high-cost LECs to recover additional revenue from the interstate jurisdiction, which reduces the amount of their costs allocated to intrastate jurisdiction, and thus, keeps their local rates lower than they otherwise would be. USF assistance is distributed on a sliding scale, with the highest cost study areas receiving the most assistance. The USF is funded by contributions from interexchange carriers (IXCs) who pay a flat monthly per-line fee based on their number of presubscribed lines. The National Exchange Carrier Association (NECA) bills the IXCs for the charges and distributes the funds to qualifying LECs on a monthly basis.

this is the inside back cover and prints blank

ORGANIZATION FOR THE PROMOTION AND ADVANCEMENT OF SMALL TELECOMMUNICATIONS COMPANIES

List of Publications

The Telecommunications Act of 1996:
Congress' New Vision for Universal Service for Rural America
(published 8/98)

Assessing the Extent of and the Demand for
Telecommunications Infrastructure in Rural America

How Public Policy has Created and Preserved Universal Service

The Dynamics of Serving Rural America

The Basics of the Universal Service Fund, Access
and Consumer Prices

An Analysis of Rural Costs

An Analysis of Current Proxy Models and
Rural Telephony

Connecting to the Future

OPASTCO

21 Dupont Circle, NW
Suite 700
Washington, DC 20036

Phone 202.659.5990
Fax 202.659.4619
http//www.OPASTCO.org