

1-1999

The ABC's of Universal Service: Arbitrage, Big Bucks, and Competition

Gregory L. Rosston

Bradley S. Wimmer

Follow this and additional works at: https://repository.uchastings.edu/hastings_law_journal



Part of the [Law Commons](#)

Recommended Citation

Gregory L. Rosston and Bradley S. Wimmer, *The ABC's of Universal Service: Arbitrage, Big Bucks, and Competition*, 50 HASTINGS L.J. 1585 (1999).

Available at: https://repository.uchastings.edu/hastings_law_journal/vol50/iss6/6

This Article is brought to you for free and open access by the Law Journals at UC Hastings Scholarship Repository. It has been accepted for inclusion in Hastings Law Journal by an authorized editor of UC Hastings Scholarship Repository.

The ABC's of Universal Service: Arbitrage, Big Bucks, and Competition[†]

by

GREGORY L. ROSSTON* AND BRADLEY S. WIMMER**

The Telecommunications Act of 1996 (“the Act”)¹ forces regulators to take into account the effect their social policies have on the development of competition and how the competitive entry the Act allows will lead to an unraveling of universal service programs based on implicit cross subsidies. Historically, regulators have used a variety of implicit and explicit subsidies to keep local residential, especially rural, rates at regulator-determined “reasonable” levels.²

Regulators used cross subsidies to keep monthly residential rates low by increasing rates for many services (e.g., long distance calls and business rates) to levels that exceeded costs. These excessive

† Since the writing of this article the FCC and the courts have issued additional rulings that affect the details of the regulations discussed in this article. The general analysis and conclusions drawn about the effects universal service may have on the development of competition, however, are largely unaffected by these additional developments.

* Deputy Director and Research Fellow, Stanford Institute for Economic Policy Research, Stanford University. The author would like to thank the Markle Foundation for funding this research.

** Assistant Professor of Economics, University of Nevada, Las Vegas.

1. Telecommunications Act of 1996, Pub. L. No. 104-230, §110 Stat. 56 (codified at 47 U.S.C. § 151 *et seq.*) [hereinafter “The Act” or “The 1996 Act”].

2. The FCC notes that “[t]he urban-to-rural subsidy has been accomplished through the explicit high cost fund mentioned above, and through geographic rate averaging. The result of state requirements that local telephone rates be averaged across the state is that high-density (urban) areas, where costs are typically lower, subsidize low-density (rural) areas. State pricing rules have also in many cases created a business-to-residential subsidy. Most states have established local rate levels such that businesses pay more on a per-line basis for basic local service than do residential customers, although the costs of providing business and residential lines are generally the same.” Federal-State Joint Board on Universal Service, 12 F.C.C.R. 8776, 7 Comm Reg. (P&F) 109, para. 11 (1997) (Report and Order) [hereinafter *Universal Service Order*].

revenues were used to offset the difference between the cost and prices for monthly residential service. These economically inefficient policies were justified as a means to ensure "universal service."³ Over time, universal service policies affected nearly every aspect of telecommunications regulation.

While economically inefficient, these policies were sustainable under a regime of regulated monopoly where entry was either very difficult or prohibited. Because the Act allows entry into local markets, the presence of economically irrational prices is not sustainable. New entrants have the incentive to enter markets where excessive prices are used to subsidize low-priced residential services. As entry begins to eat away at the implicit subsidies, prices will be forced to move towards costs.

The Telecommunications Act of 1996 recognizes the effect competition will have on the current system and requires regulators to overhaul it. In implementing necessary changes, regulators should consider how competitive firms respond to incentives. The path regulators are marching down to transform universal service, however, contains many problems that create artificial incentives that will cause firms to waste money and do not necessarily reward firms that best serve consumers.

The problems are inherent in the regulators' methods for collecting and distributing funds for universal service programs. The majority of these problems stem from attempts to create artificial regulatory and jurisdictional distinctions and will only disappear when regulators and politicians realize that efficiency and consumers are better served in a competitive environment by an economically rational system of transparent subsidies, rather than the web implicit cross subsidies.

I. Universal Service Policy Harms Efficiency and Competition

The Act embraces the idea of competition to ensure the provision of telecommunication services to consumers. While the ultimate goal is stated as letting market forces determine market

3. Mueller argues that the causation goes the other way—that "universal service" started out as moniker for one system serving everyone. Then, at the time of competitive challenge to the Bell system, universal service became the catchword to prevent competitive entry. M. MEULLER, *UNIVERSAL SERVICE, INTERCONNECTION AND MONOPOLY IN THE MAKING OF THE AMERICAN TELEPHONE SYSTEM* (1997). We do not disagree with this position, but rather are concerned with the inextricable linkage between universal service and competition.

outcomes, the Act also requires regulators to develop an explicit universal service program.⁴ Efficient markets will drive prices toward costs, but the Act attempts to maintain the current practice of keeping rates below cost to consumers who live in high-cost areas, even if these customers can afford to pay rates consistent with costs. As a result, competition in rural areas will not develop unless subsidies are made available to all carriers or prices increase to reflect costs. Competitive markets generally provide goods and services efficiently. However, regulatory rules that hold prices at levels that do not reflect costs distort providers' incentives in ways that lead to inefficient outcomes. Unfortunately, many aspects of current universal service programs unnecessarily distort providers' decisions and adversely affect the development of competition.

There are a variety of universal service programs – federal, state, high cost, low income, schools and libraries, and rural health care. These schemes will not necessarily result in competitive distortions as long as no provider or customer can escape the tax, the tax rate is the same for all providers, and the money is distributed in a non-discriminatory manner. Telecommunications regulation is, however, based on economically meaningless distinctions between interstate and intrastate services that have been extended to the implementation of universal service. In addition, the rapid pace of technological change blurs the distinction between telecommunication services and other advanced services, such as high-speed data and video transmissions. These factors, combined with the emergence of new services that will be bundled with traditional voice services, make defining telecommunication services difficult.

Universal service programs, as currently structured, rely on arbitrary definitions to determine which providers will be taxed, how much they will be taxed, and which ones are eligible for support. As a result, universal service programs not only distort consumer behavior by artificially raising prices but alter firms' actions so they can either avoid taxes or to gain access to subsidies. These latter distortions affect the development of competition.

The competitive impact of these distortions depends on the size of the programs. As the universal service programs grow, firms will

4. Congress sought to establish a "pro-competitive, deregulatory national policy framework." S. Conf. Rep. No. 104-230, at 1 (1996) ("Joint Explanatory Statement"). Explicit subsidies for universal service programs are discussed in the Act at 47 U.S.C. § 254(e).

devote more resources to avoid paying the increased charges to fund the system. This avoidance activity is non-productive and, in some cases, may be achieved by simply repositioning or renaming a service, which creates no additional value. Taking advantage of these regulatory anomalies is not free. Considerable resources must be dedicated to identify and understand the anomalies. Additionally, more than an insignificant amount of resources are needed to implement changes. These activities can only hurt consumers because providers base decisions, in part, on regulatory rules rather than on a desire to serve consumers. Finally, particular firms may gain an artificial competitive advantage simply because they are better positioned than others to avoid a tax or gain a subsidy. The end result is that providers may win customers because of their ability to use regulations advantageously rather than their ability to provide services efficiently.

A rational universal service policy would minimize these distortions while achieving clear, well-articulated goals.⁵ The policy should ensure that all competitors incur the same tax and that the incentives for tax avoidance are small. This can be done by making avoidance expensive and difficult, having a small tax, or by eliminating the tax on telecommunications altogether. We believe that making avoidance expensive and difficult is much more costly than making the tax small.⁶ The fast pace of technological change and the ability of firms to respond to incentives makes it very difficult, if not impossible, to develop rules that withstand the dynamics of the market. Additionally, it is difficult to overestimate the creativity of firms attempting to avoid taxes on narrowly defined services.

II. Jurisdictional Arbitrage

Most of the behavior discussed above can be categorized as "arbitrage." As economists, we consider arbitrage to be a good thing in most cases. Arbitrage facilitates the workings of markets by driving prices to cost and equilibrating supply and demand. In a competitive market, arbitrage opportunities are short-lived because profit-

5. We argue in an earlier paper, *The High Cost of Universal Service*, that the goals of universal service programs are not clear. This paper does not argue about the unclear goals, but rather the inefficiency in achieving the outcomes, whatever they may be. See Gregory L. Rosston and Bradley S. Wimmer, *The High Cost of Universal Service*, in CCH POWER AND TELECOM LAW (January/February 1999).

6. We discuss later the best answer—a general revenue tax to support whatever system is in place. But the political reality is that transition to such an explicit, visible system would be sure to face stiff opposition from those who benefit from the current largess.

maximizing entities move quickly to take advantage of any price differentials or arbitrage opportunities.

When arbitrage is driven by artificially imposed differences, however, it can have pernicious effects. In the case of universal service, it is clear that artificial distortions exist and will create short-run, and possibly long-run, inefficiencies. If these inefficiencies are severe enough to threaten the universal service program, a reworking of the system may come sooner rather than later. This, however, is unlikely. In the past, when arbitrage opportunities have arisen in other areas, the FCC and state regulators have simply solved the most pressing symptoms while allowing the underlying problems to persist. Just recently, the FCC ruled that internet traffic should be considered "interstate."⁷ It appears that this was done to remove internet traffic from reciprocal compensation rules for the exchange of local traffic.⁸ This is obviously a short-term fix that did not address the basic problems of regulating the interconnection of separate networks. The FCC merely put a band-aid on the most pressing and politically obvious symptom of the underlying problem. Just as this will not solve the long-run competitive interconnection situation, solutions to the universal service problems are likely to be band-aids that cover up visible problems and do not address the entire set of universal service problems. The political process generally does not respond to arbitrage opportunities by correcting the underlying problem. Rather, regulators typically adopt incremental changes to their rules that prevent obvious arbitrage opportunities that often exacerbate underlying problems.

A basic underlying problem of universal service is the dual jurisdictional nature of telecommunications regulation. This dual jurisdictional regime has resulted in regulators fighting over who will set the prices and who will assume responsibility to ensure that carriers recover their costs.⁹ Eventually, if and when competition

7. Implementation of the Local Competition Provisions in the Telecommunications Act of 1996: Inter-Carrier Compensation for ISP-Bound Traffic. See Declaratory Ruling in CC Docket No. 96-98 and Notice of Proposed Rulemaking in CC Docket No. 99-68, 14 F.C.C.R. 3689, 17 Comm. Reg. (P&F) 201 (1999).

8. The FCC goes to great strides to clarify that its ruling does not affect state rules or jurisdiction, or existing interconnection agreements. *Id.* at 26.

The Act states that reciprocal compensation applies to "transport and termination of telecommunications." 47 U.S.C. § 251(a)(5). While the majority of internet traffic may be "interstate" in nature, whether a transmission crosses state lines has nothing to do with the cost of providing access to a network, so the distinction itself is meaningless.

9. This is most recently and perhaps best exemplified by the state regulators' challenge to the FCC assertion of jurisdictional authority in implementing the

develops and regulations are relaxed, these jurisdictional battles will end. However, battles over how universal service subsidies are funded and distributed are likely to persist as long as the program exists.

A. History

Jurisdictional tensions have been present since the beginning of telephone regulation. Much of telephone regulation and associated legal precedent comes directly from railroad regulation.¹⁰ Soon after the Mann-Elkins Act of 1910 gave the ICC power to regulate interstate telecommunications, the Supreme Court, in the *Shreveport Rate Case*, gave the ICC significant power compared to state regulatory commissions.¹¹ The *Shreveport Rate Case* gave the ICC, which clearly had power over *interstate* rates, the opening to set *intrastate* rates ostensibly to eliminate discriminatory pricing practices. This pattern of federal dominance held until *Smith vs. Illinois Bell Tel. Co.* in 1930.¹² In *Smith v. Illinois Bell*, the Court held that even though the same plant and equipment were used to provide both interstate and intrastate communications, regulators had to implement rules that apportion the costs of service to each jurisdiction.¹³

Soon after the *Smith v. Illinois Bell* decision, Congress passed the Telecommunications Act of 1934¹⁴ ("1934 Act") which, among other things, created the Federal Communications Commission. Much of the 1934 Act was copied wholesale from the Interstate Commerce Act of 1888 so that precedents based on ICC railroad regulation applied to FCC telephone regulation.¹⁵ However, section 152 of the 1934 Act explicitly states that the FCC does not have authority over

Telecommunications Act of 1996. See *AT&T Corp. v. Iowa Util. Bd.*, 525 U.S. 366 (1999).

10. In fact, under the Mann-Elkins Act of 1910, the Interstate Commerce Commission had federal regulatory authority over telecommunications from 1910 until the passage of the Telecommunications Act of 1934. See Mann-Elkins Act of 1910, ch. 309, 36 Stat. 539 (1910).

11. *Houston, East & West Texas Ry. Co., v. United States*, 234 U.S. 342 (1914) ("*Shreveport Rate Case*").

12. 282 U.S. 133 (1930) ("*Smith v. Illinois Bell*").

13. See *id.* at 148-52.

14. Communications Act of 1934, 48 Stat. 1064 (1934).

15. "Most of the Act's provisions dealing with telecommunications were drawn directly from the Interstate Commerce Act, though the new commission was given some new powers to regulate tariffs and services." MICHAEL K. KELLOG ET AL., *FEDERAL TELECOMMUNICATIONS LAW* (Peter W. Huber et al. eds., 1992).

rates for intrastate communications.¹⁶ Presumably this was done to remove any doubt that the *Shreveport Rate Case* did not give the FCC power over intrastate rates.

Even though the 1934 Act ostensibly separated the federal and state jurisdictions, the nature of telecommunications service is such that it is impossible to separate the two services. As a result, the tension between federal and state regulators has continued unabated. These jurisdictional battles have typically resulted in compromises and pricing policies based on social goals rather than an analysis of economic implications. For example, during the divestiture of AT&T and the implementation of access charges and separations, some parties believed that the cross subsidy of local rates by long distance calls should remain in place.¹⁷

In conjunction with the breakup of AT&T, the FCC (and states) instituted a regime of "access" charges. These charges were put in place to continue the interstate (and intrastate long distance) contribution to cover non-traffic sensitive loop costs as well as to cover the incremental costs of providing the switching services to provide long distance access. To implement access charges, the FCC and a Federal-State Joint Board determined, quite arbitrarily, that twenty-five percent of all the costs associated with connecting a consumer to the network – loop costs – be recovered through federal charges.¹⁸ The FCC favored use of flat-rated charges because loop

16. 47 U.S.C. §152(b).

17. Federal Communications Commissioner Anne Jones' 1983 dissent from the Joint Board's access charge and separations plan shows that the issues associated with universal service and separation of costs are not new. In fact, Commissioner Jones' statement appears to be frighteningly relevant to current issues.

It is not clear to me that the Joint Board's recommendations can in any event be more than a temporary benefit to either high-cost telephone companies or their regulators. The days are numbered for regulators who believe they can mandate economically irrational behavior in the telephone industry. It is unrealistic to persist in the belief that dynamic telecommunications markets will adjust to a regulator's transitional timetable to preserve "equities" among affected market participants. "Equity"-driven policies may be sustainable in a slow growth, static technology industry. They are not simply viable in a dynamic growth industry such as telecommunications. Consequently, I fear that neither high-cost companies nor their state regulators will find the Joint Board's recommendations a solution to their respective financial and political ills. I am sure consumers will not.

Federal-State Joint Board on Jurisdictional Separations Procedures, Amendment of Part 67 of the Commission's Rules and Establishment of a Joint Board, CC Docket 80-286, 48 F.R. 46556, 46656-02, 46588 (1983) (dissenting Statement of Commissioner Anne P. Jones).

18. The first separations manual was put forth in 1947. A series of decisions over the

costs are not sensitive to the amount of usage.¹⁹ Consumer advocates and rural Senators lobbied heavily to keep cross subsidies from high-volume users to low-volume users hidden and opposed implementation of federal flat-rated charges (subscriber line charges or "SLCs").²⁰ These flat-rated charges ultimately removed part of the inefficient recovery of loop costs.

B. Economic Considerations

While there is tension about how costs should be allocated between jurisdictions, because there is no economically meaningful distinction between interstate and intrastate services, the common costs to provide these services cannot be allocated in a non-arbitrary way. Because both interstate and intrastate calls travel over the same facilities, economies of scope exist in the provision of these services. This means that a significant amount of costs are "common" to the provision of these services. Common costs cannot be divided between the jurisdictions in any economically rational way. As a result, because each set of regulators wants to maintain low prices for the services in their jurisdictions, each want services that are subject to another jurisdiction to pay for the common costs.

Most parties agree that *per minute* access charges are above cost. Incumbent local exchange providers argue that these are necessary to fund below cost services whereas long-distance carriers claim that these are the source of excess profits. In either case, there are some customers who pay more than their costs to serve them and other customers who pay less than their cost of service. As a result, there is

next 30 years increased the interstate share of fixed loop costs to 25% or more. See G. BROCK, TELECOMMUNICATION POLICY FOR THE INFORMATION AGE: FROM MONOPOLY TO COMPETITION, ch. 5 (Cambridge: Harvard University Press, 1994); Mueller, *supra* note 3.

19. For a thorough discussion of the politics and interest groups involved and their positions on a wide variety of restructuring issues, see BROCK, *supra* note 18, at chs. 10-11.

20. The FCC used a variety of rates to recover its "share" of local telephone plant costs, the majority of which is not traffic sensitive. These included subscriber line charges (SLCs), which are used to recover a portion of loop costs, and a variety of other per-minute charges and per-line taxes on long-distance carriers. Because of political pressures, the FCC was forced to "cap" SLCs at levels below total non-traffic-sensitive costs. Residential SLCs were initially capped at \$3.50, while SLCs for business lines were capped at \$6.00. Because SLCs were artificially capped, per-minute interstate access charges were set at rates that exceeded traffic-sensitive costs, which artificially increased the price of long-distance calls. Recently, the FCC has implemented some major changes to its interstate access charges including a relaxation of its caps on SLCs. Caps on non-primary, or secondary, residential line SLCs are now allowed to be as high as \$6.07 and business lines SLC caps have been increased to \$9.20.

at least some implicit intra-company cross subsidy taking place that may be affected by the introduction of competition.

Regulatory distortions have been the cause of inefficient behavior throughout the history of telecommunications regulation. Inflated access charges paved the way for entry by competitive access providers that bypassed local providers, connecting them directly to long distance carriers.²¹ These arrangements allowed large customers to avoid artificially high access charges. Moreover, incumbent local providers had difficulty passing regulatory hurdles to begin offering new services to compete with competitive providers.²² Access charges are still above cost in most areas of the country, although the FCC has taken steps to move these closer to cost in the near future by changes in price structures and price-cap reductions.²³ As competition develops, the FCC has proposed a variety of pricing flexibilities that may also result in reduced or more efficient rates.²⁴

States also have a variety of charges that have been used as implicit subsidies for universal service.²⁵ These charges took similar forms – geographically averaged connection charges, inflated per-minute access charges and inflated fees for services such as call waiting. The rates for these charges generally differed from the federal rates.

C. Distortionary Effects

In the absence of competition, there is little or no ability for customers of regulated incumbents to substitute, or arbitrage, flat-rated monthly state or federal charges because all lines are assessed both charges. The differences between interstate and intrastate per-

21. We note that competitive access providers may have been competitively efficient and beneficial even without the artificial umbrella of above cost access charges. However, high access charges provided an additional artificial entry incentive.

22. "We find that requiring an incumbent LEC to file a waiver to introduce a new rate element imposes a costly, time-consuming, and unnecessary burden on incumbent LECs, and significantly impedes the introduction of new services. Also, we believe that delaying implementation would not assist in the development of a competitive marketplace." Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, 7 Comm Reg. (P&F) 1209, para. 309 (1997) (First Report and Order) [hereinafter *Access Reform Order*].

23. See *Access Reform Order*; Price Cap Performance Review for Local Exchange Carriers, Fourth Report and Order in CC Docket 94-1 and Second Report and Order in CC Docket No. 96-262, FCC 97-159, 12 F.C.C.R. 16642 (1997) [hereinafter *Price Cap Performance Review*].

24. See *Access Reform Order*; *Price Cap Performance Review*.

25. See R. CRANDALL AND L. WAVERMAN, TALK IS CHEAP: THE PROMISE OF REGULATORY REFORM IN NORTH AMERICAN TELECOMMUNICATIONS (1995).

minute access charges provided carriers an opportunity to bypass the local network or to misreport whether a long-distance call has crossed state lines or not. For example, until recently, intrastate access charges in Maine were about 26 cents per minute while the interstate access charges were about 7 cents per minute.²⁶ As a result, long-distance carriers had an incentive to report intrastate calls as interstate calls.²⁷ While the local carrier performs the same services for both types of calls, access charges in Maine differed by a factor of more than 3.

The total universal service program consists of several federal and state programs. Regulators controlling the programs have different goals and constituencies and, as a result, often develop inconsistent policies. The Telecommunications Act requires universal service subsidies be made explicit.²⁸ Even if subsidies were made explicit—which has yet to happen—jurisdictional arbitrage opportunities remain.

In the Act's universal service program, Congress required the FCC to begin a new program that provides subsidies to schools, libraries, and rural hospitals.²⁹ While the FCC determined it had the authority to tax all telecommunication revenues for all of its programs, it concluded, with some help from the Joint Board, that it was on safer legal ground by limiting its high-cost revenue base to interstate revenues.³⁰ The FCC determined, however, that the tax to support schools and libraries should be assessed on both interstate and intrastate revenues.³¹ This created a difference in tax rates for

26. New England Telephone and Telegraph Company, 185 P.U.R. 4th 177 (1998) (Order of the Maine Public Utilities Commission in the Investigation into Regulatory Alternatives for NYNEX, Docket No. 94-123).

27. Long distance calls within the state of Maine are all intra LATA toll calls because the state consists of a single LATA.

28. 47 U.S.C. § 254(e).

29. 47 U.S.C. § 254(h)(1)(A) discusses the provisions for Health Care providers for rural areas. §254(h)(1)(B) discusses the provisions for educational providers and libraries.

30. "The Joint Board makes no recommendation concerning the appropriate funding base for the modified high cost and low income assistance programs, but does request that the Commission seek additional information and parties' comment, particularly the states, regarding the assessment method for these programs." Federal-State Joint Board on Universal Service, 12 FCC Rcd 87, para 817, 5 Comm. Reg. (P&F) 1 (1996) (recommended decision) [hereinafter *Universal Service Recommended Decision*]. The FCC responded to this "[b]ecause the Joint Board did not recommend an interstate and intrastate assessment base for high cost and low-income programs, for now we will assess the support for these programs solely from contributors' interstate end-use telecommunications revenues." *Universal Service Order*, para. 772.

31. The Joint Board recommended "that universal service support mechanisms for schools and libraries and rural health care providers be funded by assess both the

interstate and intrastate services. In the second quarter of 1999, the Federal universal service taxes are 3.05 percent on interstate revenues and an additional 0.57 percent on all revenues.³² Furthermore, the Commission limited incumbent local carriers' ability to recover these new charges by requiring them to recover their "contributions" through increased per-minute interstate access charges.³³ Thus, as the Commission took great strides to reduce the implicit subsidies buried in access charges, it replaced the majority, if not all, of these reductions with universal-service charges.

In addition to the differences in the tax rates and distortions caused by the federal taxes, states are in the process of implementing their own programs. For example, the Kansas Commission has implemented its state universal service program, which it estimates will total \$111.6 million annually once it is phased in fully over a period of three years.³⁴ The Kansas Commission determined that it would tax all intrastate retail revenues on the same percentage basis, reaching an estimated 14.1 percent at the end of three years.³⁵ This will result in an increase in local rates of approximately \$3 per month.³⁶

When combined with the federal programs, universal service taxes on intrastate revenues may be greater or less than the rates on interstate revenues. Moreover, because each state will have its own program, the differentials will not be the same across states. For states with a high tax rate, carriers have the incentive to move revenues to the interstate jurisdiction. Such shifting could cause a downward spiral in its tax base. As the rate base dwindles, the tax rate will have to increase, which, in turn, will further increase incentives to move revenues. It is not clear whether high-cost states

intrastate and interstate revenues of providers of interstate telecommunications services." *Universal Service Recommended Decision*. The FCC adopted the combined revenue recommendation for schools, libraries and rural health care providers. "We adopt the Joint Board's recommendation that a carrier's contribution to support for eligible schools, libraries, and health care providers be assessed based on contributors' interstate and intrastate telecommunications revenues." *Universal Service Order*, para. 772.

32. See Proposed Second Quarter 1999 Universal Service Contribution Factors, CC Docket 96-45, 14 F.C.R. 5072 (1999) (Public Notice).

33. *Universal Service Order*, para. 773.

34. In the Matter of a General Investigation Into Competition within the Telecommunications Industry in the State of Kansas Docket No. 190, 492-U, 94-GIMT-478-GIT, paras. 111-12 (1996) (Order Establishing the Guidelines for the Local Telephone Exchange Service in Kansas and Incorporating the State Telecommunications Act of 1996).

35. See *id.*

36. See *id.*

recognized this problem when they argued against the FCC taxing both revenue streams. If they had, and federal programs taxed all revenues equally, each state could then argue that it be allowed to tax both revenue streams. Jurisdictional arbitrage opportunities would have been eliminated because tax rates would be identical.³⁷

These rules, coupled with strict regulation of incumbent local exchange carriers, alter the nature of competition. For example, incumbent local exchange providers are required to charge certain monthly fees, e.g., subscriber line charges, that are categorized as interstate charges. These charges are therefore subjected to the interstate tax rate. Incumbent carriers can only recover these increased costs through increases in access charges.³⁸ Competitive local exchange carriers are not regulated and have more leeway to classify a charge as interstate or intrastate.³⁹ Thus, if the interstate tax rate is higher, competitive carriers will determine that their flat-rated charges are intrastate charges and avoid the higher tax rate. If the tax-rate differential is high enough, customers may pick a competitive carrier over an incumbent carrier simply because the competitor is better able to shift revenue, not because it is a better provider.

37. It should be noted that the opportunity would not be eliminated to the extent that consumers can shift their purchases to other states. For example, a large corporation could shift purchases so even though they buy service in state A, they pay for service in state B. An example might be that a corporation could purchase wireless service from AT&T in the lowest cost state and since charges do not vary by location of the call, no tax would be due in the state where the service is used. As of right now, this is probably fairly minor occurrence, but could increase with changes in technology and with an increase in tax rates.

38. See *Access Reform Order*, which provides:

Price cap LECs may treat their contributions to the new universal service mechanisms, including high cost and low-income support and support for eligible schools, libraries, and health care, as exogenous changes to their price cap indices (PCIs). Because the only interstate revenues that will serve as the basis for assessing universal service contributions in 1998 will be end-user revenues, we find that price cap LECs recovering their universal service obligation through interstate access charges must recover those contributions in the baskets for services that generate end-user interstate revenues.

Id., para. 379 (footnote omitted).

39. See "Prospectus" for Rhythms Net Connections, Inc., p. 18, March 16, 1999 ("Telecommunications providers pay a variety of surcharges and fees on their gross revenues from interstate and intrastate services. The division of our services between interstate and intrastate services is a matter of interpretation, and in the future the Federal Communications Commission or relevant state commission authorities may contest this division. A change in the characterization of the jurisdiction of our services could cause our payment obligations to increase. In addition, pursuant to periodic revisions by state and federal regulators of the applicable surcharges, we may be subject to increase in the surcharges and fees currently paid.").

Encouraging this behavior is inefficient.

While such price differentials will not be competitively neutral, a larger problem may come from regulators' attempts to correct problems of revenue shifting by increasing new entrant's regulatory burden. There is a long and storied history of cost allocation for regulated incumbent local exchange providers.⁴⁰ Regulators require incumbents to keep excruciatingly detailed cost allocation manuals subjecting these carriers to detailed rules about how to account for different costs and revenues.⁴¹ So far, new entrants have escaped such detailed regulatory scrutiny. If, however, large differences in tax rates persist, competitive providers will tailor their offerings to avoid the taxes and regulators may subject these carriers to similarly intrusive regulations, even though it is not clear what will be gained from such requirements.

There is already evidence of revenue shifting on the part of unregulated entities. When the FCC moved to its new revenue tax to fund universal service, there was evidence that many wireless carriers were under-reporting the amount of revenues they received from interstate calling.⁴² This under-reporting may simply be a result of competitive carriers' unique offerings. For example, packages such as

40. The FCC notes that the dual jurisdictional nature of telecommunications regulations requires separation of interstate and intrastate costs.

The dual system of regulation reflected in the Communications Act of 1934 requires the separation of common carrier costs and revenues between interstate and intrastate operations, so that we and the states may each regulate the provision of communications common carrier services within our respective jurisdictions.

Separation of Costs of Regulated Telephone Service From Costs of Nonregulated Activities, CC Docket No. 86-111, 2 F.C.C.R. 1298, para. 8 (1987) (Report and Order).

41. The FCC describes cost allocation procedures as follows:

The jurisdictional separations process begins with the costs recorded in the USOA (uniform system of accounts) accounts. Those costs are first assigned to categories and subcategories. Each category of costs is then assigned or allocated in accordance with a prescribed rule or principle. Although the Separations Manual categories are designed so as to group together those costs which can be identified as belonging to a single jurisdiction, most of the categories contain costs which must be allocated between the jurisdictions. Some of the separations categories are subdivisions of a single USOA account, while others combine costs which are recorded in several accounts. The Separations Manual is a fully distributed costing system, which means only that it exhaustively apportions the costs of a company's regulated operations between the jurisdictions.

Id. para. 9 (footnotes omitted).

42. The FCC notes that "some CMRS providers reported seven percent of their CMRS revenues as interstate, while other reported 28 percent as interstate." Federal-State Joint Board on Universal Service, CC Docket No. 96-45, 13 F.C.C.R. 21252, para. 10 (1998) (Memorandum Opinion and Order and Further Notice of Proposed Rulemaking).

AT&T's "Digital One Rate," where customers pay a single monthly fee for a set amount of minutes, make arbitrary allocation procedures difficult because such plans do not differentiate between interstate and intrastate minutes. The possible under-reporting led the FCC to seek comment on how to divide wireless (including paging companies) carriers' revenues.⁴³ It also set a "safe harbor," equal to a predetermined percentage of total revenues, for carriers to elect.⁴⁴ The safe harbor creates an obvious adverse selection result. Assuming the interstate tax rate is higher, carriers with high interstate revenues will choose the safe harbor while those with low interstate revenues will choose to differentiate the two. Because the delineation is arbitrary, this could be a move in the right direction. A better answer might be for the FCC to set a percentage that is interstate without the possibility of refuting it.

Artificially categorizing services and costs as interstate or intrastate, while always arbitrary, has the potential to skew competitive results and serves little purpose in today's market. The decisions concerning where to invest in new services, which markets to enter, and how to develop offerings should be based on market factors, not regulatory distortions. Regulators should be considering how to lessen regulatory burdens, rather than extending regulatory regimes to competitive carriers. While the differences of opinion between state and federal regulators appear to be large, they should be cognizant of the effects their jurisdictional squabbles have on competition and adjust their rules to minimize opportunities for jurisdictional arbitrage.

D. Geographic De-Averaging

In a competitive market, rates will reflect costs. The universal service programs intend to prevent the alignment of rates and costs. Because telephone costs are inversely related to population density, movement of rates towards costs would result in large rate increases in rural areas and reductions in dense areas.⁴⁵ Historically, regulators,

43. *See id.*

44. The FCC established a "safe harbor percentage of interstate revenues for cellular and broadband PCS telecommunications revenue. The Commission will, therefore, not seek supporting data from cellular and broadband PCS telecommunications revenues if they report at least 15 percent of their cellular and broadband PCS telecommunications revenue as interstate." *Id.* para. 13. The FCC set lower percentages for paging and SMR providers. *See id.*

45. In dense areas, larger switches and shorter loops result in relatively lower costs than in areas of low population density. Other factors, such as increased sharing of

in addition to other implicit subsidies, relied on geographically averaged rates to hold rates down in high-cost areas.⁴⁶ In some states, regulators depart further from efficient pricing and rely on “value-based pricing,” where prices are inversely related to the number of people located in customers’ calling areas. This results in prices that are inversely related to the cost of providing service, which is inconsistent with economic efficiency.

The new universal service program attempts to give carriers incentives that are consistent with cost-based de-averaged rates without making consumers pay higher prices for local service. Regulators plan to base support on cost-model estimates of the average economic cost of serving customers within small geographic areas.⁴⁷ Under this plan, carriers serving high-cost customers will receive payments (revenues plus subsidies) that should equal cost. It is therefore arguable that the new universal service program gets half of the equation right. If support truly reflects the revenue necessary to induce a carrier to provide services, carrier choice will be based on efficiency.⁴⁸ However, the price of local service will be held below cost through the subsidies, which will be collected through a tax on telecommunication services. Thus, the distortion in prices introduced by the programs will skew consumer decisions. The benefits of improved incentives to enter rural markets may be offset by the inefficiencies associated with high tax rates.

The use of a highly geographic-specific support mechanism may

facilities in dense areas, and the need to use additional electronics to transmit signals over long distances in rural areas result in relatively lower costs in dense areas.

46. The FCC notes that “[t]he urban-to-rural subsidy has been accomplished through the explicit high cost fund mentioned above, and through geographic rate averaging. The result of state requirements that local telephone rates be averaged across the state is that high-density (urban) areas, where costs are typically lower, subsidize low-density (rural) areas. State pricing rules have also in many cases created a business-to-residential subsidy. Most states have established local rate levels such that businesses pay more on a per-line basis for basic local service than do residential customers, although the costs of providing business and residential lines are generally the same.” *Universal Service Order*, para. 11.

47. The FCC has adopted a platform—the basic set of algorithms—that will be used to estimate the forward-looking economic cost of providing voice-grade phone services, which will be used to determine the amount of subsidies received by non-rural, i.e. carriers with more than 100,000 lines in a service area. The FCC is currently working on fine-tuning the model and determining the input values that will be input into the platform. The FCC intends to estimate the average cost of serving a customer within each wire center, which is simply the customers served by the same switch. *See In the Matter of Federal-State Joint Board on Universal Service, Forward-Looking Cost Support for High Cost Support for Non-Rural LECs*, 13 F.C.C.R. 21323, para. 12, (1998) (Fifth Report and Order).

48. This result assumes that all carriers are eligible to receive support payments.

create additional arbitrage problems because of other inconsistent regulations. In the *Local Competition* order, the FCC required states to de-average unbundled element prices into at least three zones.⁴⁹ Historically, regulators have set rates based on statewide averages, which results in rates that exceed cost in urban areas. If regulators continue this practice when setting unbundled element prices, competitors will find it less profitable to enter urban markets using unbundled elements. Thus far, states and their incumbent carriers have generally not proposed such de-averaged rates for unbundled loops. Because the FCC determined that competitors that enter high-cost areas using unbundled elements are eligible for universal service support,⁵⁰ differences between cost estimates used to set support and prices of unbundled elements will create arbitrage opportunities.

If unbundled element prices are not de-averaged, universal service subsidies may exceed the amount necessary to induce a carrier to provide service using unbundled elements. For example, if unbundled element prices are based on a statewide average cost of \$15, but support is based on a geographically de-averaged estimate of \$61, arbitrage opportunities will arise. Assume further that support is equal to estimated cost minus a benchmark of \$31. The competitive carrier would receive a subsidy of \$30 and customer revenues of \$31, but only incur costs of \$15.⁵¹ Clearly this arbitrage opportunity is created by the use of geographically averaged unbundled element prices and skews carrier choice toward the use of unbundled network elements.

The FCC attempted to address this potential problem by limiting support to the purchase price of unbundled elements if they are

49. The Commission concluded that

three zones are presumptively sufficient to reflect geographic cost differences in setting rates for interconnection and unbundled elements, and that states may, but need not, use these existing density-related rate zones. Where such systems are not in existence, states shall create a minimum of three cost-related rate zones to implement de-averaged rates for interconnection and unbundled elements. A state may establish more than three zones where cost differences in geographic regions are such that it finds that additional zones are needed to adequately reflect the costs of interconnection and access to unbundled elements.

Implementation of the Local Competition Provision in the Telecommunications Act of 1996, 11 FCC Rcd 15,499, para. 756, 4 Comm. Reg. (P&F) 1 (1996) (First Report and Order) [hereinafter *Local Competition Order*].

50. *Universal Service Order*, paras. 152-67.

51. For simplicity, this example assumes these are the only costs and revenues. Clearly the reality is more complex, but the arbitrage point remains the same even when other factors are considered.

used.⁵² During the transition from the old to the new universal service program, carriers will continue to receive support based on statewide geographically averaged embedded costs, while unbundled element prices are supposed to reflect geographically de-averaged economic costs. The mismatch of approaches required regulators to limit support to prevent artificial arbitrage opportunities.

It remains to be seen whether regulators will allow this type of arbitrage to take place once the new universal service program is put in place. If states continue to use statewide averaged unbundled element prices, it may be preferable to allow the arbitrage opportunity to remain by allowing carriers to receive the full subsidy regardless of whether or not they deliver service using unbundled elements. In this case, the potential for arbitrage puts pressure on states to de-average unbundled element prices, which will help move prices towards cost and remove the input distortion. Again, the dual jurisdictional nature of telecommunications regulation makes it very difficult for state and federal regulators to develop consistent policies, creating a large amount of regulatory uncertainty.

III. Service Category Arbitrage

A potentially larger problem arises from the *legal* distinctions between different services. Historically, regulators have used legal distinctions to promote different services, customers, or providers. In doing so, they created not only the intended benefits at the time, but also incentives for companies and consumers to get around the artificial distinctions. These incentives are increasingly forcing regulatory agencies to re-write rules to keep pace with changes in technology that outdate the artificial distinctions.

A. Information Service vs. Telecom Service

The 1996 Act implicitly distinguishes telecommunication services from information services. This distinction is important because telecommunications providers are required to contribute to the universal service program, and only eligible telecommunication carriers are eligible to receive support under the program.⁵³ The

52. *Universal Service Order*, para. 174.

53. The Act states that “[e]very *telecommunications* carrier that provides interstate telecommunications services shall contribute. . . .” 47 U.S.C. § 254(d). Section 254(e) states that “only an eligible *telecommunications* carrier designated under section 214(e) shall be eligible to receive specific federal universal service support.” *Id.* § 254(e) (emphasis added).

distinction between information and telecommunication services is not new. Since the late 1960's and early 1970's regulators have struggled with how to regulate information service providers. Generally, it appears that regulators recognized that their inefficient regulations, if applied to information services, would choke off the development of this industry.⁵⁴

In its *Computer II* decision, the FCC created a distinction between "basic" and "enhanced" services. The decision labeled a service "enhanced" if it "employ[ed] computer processing applications that act on the format, content, code, protocol or similar aspect of the subscriber's transmitted information; . . . or involve[d] subscriber interaction with stored information."⁵⁵ Services that did not meet this definition were generally considered basic services. The MFJ Court made a similar distinction between "information" and "telecommunications" services.⁵⁶ While these distinctions may seem substantial, little differences exist between the provision of voice and advanced services. Technically, a voice signal that is converted to digital before going through a network is indistinguishable from computer information that is transmitted over the network. Transmission of computer information, however, is not considered a telecommunications service.

These distinctions are important because the FCC determined that all enhanced services were exempt from its access charge rules and, in general, were not regulated.⁵⁷ The 1996 Act continued this

54. It is unclear whether this argument is about succeeding because it is protecting the information service industry as it develops or whether it is because it is promoting efficiency by refusing to extend inefficient regulation. The FCC found in 1988 that it should continue its exemption of the enhanced service provider industry because it found that the industry was entering a unique period of rapid expansion and substantial change. See Amendments of Part 69 of the Commission's Rules Relating to Enhanced Service Providers, 3 FCC Rcd 2631 (1988) (Order).

55. 47 C.F.R. § 64.702(a)

56. See *United States v. AT&T*, 552 F. Supp. 131 (D.D.C. 1982), *add'd sub nom. Maryland v. U.S.*, 460 U.S. 1001 (1983). Section IV(j) discusses information services and section IV(p) discusses telecommunication services.

57. See Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry), 77 F.C.C.2d 384, 417, 47 Rad. Reg. 2d (P&F) 669 (Final Decision), *modified*, Memorandum Opinion and Order, 85 FCC 2d 50, 48 Rad. Reg. (P&F) 1107 (1980), *aff'd and clarified by* Memorandum Opinion and Order on Further Reconsideration, 88 F.C.C.2d 512, 50 Rad. Reg. 2d (P&F) 629 (1981), *aff'd sub nom. Computer and Comm. Indus. Ass'n. v. F.C.C.*, 693 F.2d 198 (D.C. Cir. 1982), *and cert. denied*, 461 U.S. 938 (1983) [hereinafter *Computer II*]. The interstate access exemption came in 1983. See MTS and WATS Market Structure, Docket No. 78-72, 97 FCC 2d 682, 711-22 (Memorandum Opinion and Order). See also Amendments of Part 69 of the Commission's Rules Relating to Enhanced Service Providers, CC Docket No. 87-215, 3

legal distinction using the terminology of information and telecommunications services.⁵⁸ In implementing the 1996 Act, the FCC concluded that Congress intended to extend the FCC's earlier distinctions between basic and enhanced services and adopted rules that were basically consistent with its *Computer II* decision.⁵⁹

In its 1998 Report to Congress, the FCC clarified its definitions and determined that information service providers use telecommunications to provide their services.⁶⁰ This creates some potential problems, which the FCC recognized in its report. First, the development of internet protocol (IP) telephony creates a problem. While the FCC recognizes that the method of delivery is less important than the service provided, it is difficult, if not impossible, to craft regulations that create distinctions when the services being defined are becoming increasingly indistinguishable.

In its 1998 Report, the FCC notes that if a customer uses the IP for phone-to-phone communications, the service may be considered a telecommunications service and will be taxed, although the FCC did not make any definitive judgement based on the record before it.⁶¹ The technical equivalence of information services and IP telephony makes enforcement of such rules all but impossible.

The FCC also noted that because information service providers use telecommunications services to transmit information, they indirectly contribute to universal service. However, the FCC is not certain how to handle situations where information service providers furnish their own underlying transmission capacity. It therefore left open the possibility of imputing the portion of the revenues that should be included in the universal service tax base when information

FCC Rcd 2631 (1988) (Order).

58. The Act defines "information services" as offering the capability for "generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications." 47 U.S.C. § 153(20).

59. "For purposes of this order, providers of enhanced services and providers of information services are referred to as ISPs." *Access Reform Order*, n.498. "Reading the statute closely, with attention to the legislative history, we conclude that Congress intended these new terms to build upon frameworks established prior to the passage of the 1996 Act. Specifically, we find that Congress intended the categories of "telecommunications service" and information service" to parallel the definitions of "basic service" and "enhanced service" developed in our *Computer II* proceeding, and the definitions of "telecommunications" and "information service" developed in the Modification of Final Judgement breaking up the Bell system." *Report to Congress*, para. 20.

60. "Internet access, like all information services, is provided 'via telecommunications.'" *Report to Congress*, para. 67.

61. *See id.*, para. 2.

service providers self-supply transmission capacity.⁶²

Rapid technological change is blurring the distinction between information and telecommunication services. Artificial distinctions based on whether or not the transmission capacity is leased or owned, where owned facilities are not taxed, give carriers an artificial incentive to build rather than lease facilities. Attempts to impute the portion of revenues that are attributable to underlying capacity are equally likely to introduce distortions. Distinctions as fine as whether a call is a phone-to-phone transmission, rather than a computer-to-computer transmission, are impossible to make.

The use of legal distinctions to determine which services are subject to the universal service tax creates uncertainty about universal service's tax base. Firms that provide "interstate telecommunications" are required to contribute to the universal service fund. However, in today's world of rapidly changing technology, even this simple definition is becoming difficult to implement. Implementation becomes even more complicated when providers begin offering bundles of services over their own transmission capacity. Should only revenues derived from simple voice services be included in the tax base, or should additional services, such as internet access, over which consumers may communicate by voice, be included? If the decision is that only telecommunications service revenues should be taxed, firms that offer bundles of services, some of which are classified as telecommunications, have the option of diverting revenues to non-telecommunication services. For example, AT&T, with its recent acquisition of TCI, has an incentive to provide free phone service with a special high tier of cable services, provided cable tax rates are lower, or it may offer several hundred minutes of free long-distance service with its cable offerings. Such a shift in revenues allows AT&T to escape the high-tax jurisdiction and gain an artificial competitive advantage.⁶³ Once again, regulations affect provider decisions and consumers are made worse off because regulations are not likely to be consistent with their best interests.

B. Carrier Eligibility

In order for a universal service program to be consistent with the new competitive environment it must allow a wide variety of service

62. See *id.*, paras. 67-71.

63. If cable tax rates are higher, AT&T may simply shift revenues to phone service or internet access.

providers to be eligible to receive universal service support. In a competitive market, consumers ultimately determine which service offerings will succeed. Regulators must therefore not limit consumer options by restricting the type of carriers that are eligible for universal service support.⁶⁴ However, because incumbent carriers have been the sole recipients of subsidies, both implicit and explicit, regulators are under pressure to adopt standards that favor incumbents.

In the Universal Service Order, the Commission determined the criteria a carrier must meet to be considered eligible to receive universal service subsidies ("eligible carriers"). First, the Act specifies that only telecommunications carriers may be eligible.⁶⁵ Eligible carriers are also required to use their own facilities and must offer service throughout the entire service area for which eligibility is granted.⁶⁶ To fulfill the latter requirement, resale, in combination with a carrier's own facilities, can be used.⁶⁷

While state regulators will make the ultimate determination of carrier eligibility,⁶⁸ the FCC determined that a "core" set of "designated" services must be provided to gain access to federal subsidies. The FCC determined that a carrier must provide: "single-party service; voice grade access to the public switched network; Dual Tone Multifrequency ("DTMF") signaling or its functional equivalent; access to emergency services including, in some circumstances, access to 911 and Enhanced 911 ("E911"); access to operator services; access to interexchange services; access to directory

64. To this end, the Joint Board recommended and the FCC adopted a principle that the federal universal service mechanism should be competitively neutral. "Universal service support mechanisms and rules should be competitively neutral. In this context, competitive neutrality means the universal service support mechanisms and rules should neither unfairly advantage nor disadvantage one provider over another, and neither unfairly favor nor disfavor one technology over another." *Universal Service Order*, para. 47.

65. The Act states that "only an eligible telecommunications carrier designated under 214(e) shall be eligible to receive specific Federal universal service support." 47 U.S.C. § 254(e).

66. The 1996 Act provides that "[a] common carrier designated as an eligible telecommunications carrier . . . shall . . . (A) offer the services that are supported by Federal universal service support mechanisms under 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 (B) advertise the availability of such services and the charges therefore using media of general distribution." 47 U.S.C. § 214(e)(1).

67. *See id.*

68. *See* 47 U.S.C. § 254(e).

assistance; and toll limitation services for qualifying low-income consumers.”⁶⁹ The FCC further determined that unbundled elements are considered a carrier’s “own facilities” for purposes of being considered an eligible carrier.⁷⁰ In order to receive support, carriers must offer each of these designated services.⁷¹

In addition, the FCC concluded that a minimum level of local usage should be supported by federal universal service mechanisms. Carriers that do not offer a local usage component as part of their flat-rated offerings will not be eligible for support.⁷² The FCC justifies this requirement on the basis “that universal service must encompass the ability to use the network, including the ability to place calls at affordable rates.”⁷³ The FCC goes on to claim that such a requirement is competitively neutral because the absence of such a requirement may favor wireless over wireline technologies. The FCC explains that because a wireline telephone system has relatively high fixed costs with low usage costs, while a wireless network may have moderate fixed costs but per-minute costs that are higher than wireline networks, a local usage component is needed to be competitively neutral.⁷⁴ The FCC concludes that unless it quantifies an amount of local usage that must be provided without extra charges in order to be eligible, consumers may have to pay additional per-minute fees and would not receive the benefits universal service is designed to promote.⁷⁵ This reasoning, however, ignores consumer preferences and the obvious comparative advantage wireless carriers

69. *Universal Service Order*, para. 56. For several of these services, e.g., single-party service, toll blocking, and 911 or E911, the FCC allowed incumbent carriers to petition their state commissions to permit them a period of several years to upgrade their networks before they would be considered ineligible for support. *See id.*

70. *Universal Service Order*, para. 163.

71. *See id.*

72. *See id.* paras. 65-70.

73. *Id.* para. 66.

74. The absence of a requirement would be consistent with a policy of competitive neutrality. Additionally, because incumbent carriers will remain rate regulated until competition develops, the option of a flat-rated plan that includes a local usage component will be guaranteed for the immediate future.

75. *Universal Service Order*, para. 67. In a subsequent further notice, the FCC sought comment on this issue, asking: “whether carriers should only be eligible to receive universal service support with respect to subscribers who select a basic service package that include a certain amount of local usage without additional charge. Alternatively, [the FCC sought comment] on whether carriers should only be eligible to receive universal service support if a certain percentage of their subscribers subscribe to a basic service package that includes a certain amount of flat-rated local usage.” Federal-State Joint Board on Universal Service, CC Docket no. 96-45, 13 F.C.C.R 21252, para. 50 (1998) (Memorandum Opinion, Order, and Further Notice of Proposed Rulemaking).

may have in serving customers that have little desire to make a large number of calls. If the regulator-determined minimum level of service exceeds consumer desires, there is room for welfare improvement.

For example, in rural, high-cost areas, customers who make few calls may be made better off if they are allowed to use a wireless service with a low monthly rate and a relatively high per-minute charge. By allowing consumers the option of choosing between a wireline and a wireless offering, both of which are subsidized, consumers will determine which service best matches their needs. In a competitive environment, consumers would only choose a relatively low-quality service, or one that had a low connection charge and high per-minute charges, if that combination of service and price best suited their needs. However, because regulators require a local usage component, such an option will not be available because only plans with local usage components will be supported.

C. Second Lines

While the Joint Board determined that only primary lines should be supported, the FCC concluded that, at least in the near future, all lines, including secondary lines, would continue to receive support.⁷⁶ Because subsidizing non-primary wireless phones may be seen as excessive, state regulators may not allow wireless carriers to be eligible for subsidies. But preventing universal service subsidies to wireless carriers distorts their ability to be primary service providers. Recently, Western Wireless filed a petition with the FCC claiming that the Kansas Commission has adopted eligibility standards that favor incumbent carriers, making it very difficult for new entrants to gain access to subsidies.⁷⁷ While we have not developed an opinion on the merits of Western Wireless's petition, the potential for state commissions to block the introduction of new technologies to deliver service to rural areas frustrates the ability of markets to find the least-cost solution to the universal service problem. As discussed below, we conclude that consumers should have the ultimate decision of whether a company receives subsidies. This could be accomplished

76. The Joint Board recommended that support only go to primary connections, but the FCC determined that all lines would continue to be supported until the new forward-looking mechanism is implemented, at which time it will address this issue. See *Universal Service Order*, para. 96.

77. See Western Wireless Corporation's Petition for Preemption, Pursuant to Section 253 of the Communications Act, of Kansas Statutes and Rules that Discriminate Against New Entrants, File No. CWD 98-90 (July 20, 1998).

by relaxing the requirements a carrier must meet to become an eligible carrier.

IV. Possible Solutions

A. Allow Choices by Consumers, Not Regulators

It is not clear whether the Act or the FCC's implementation of it needs to be changed to give consumers the power to choose the services they find offer the best tradeoff between quality and cost.⁷⁸ The Act says subsidies must go to carriers, not consumers. Where the payments go, however, is not as important as which services qualify for subsidies. The Telecommunications Act requires that "[q]uality services should be available at just, reasonable, and affordable rates."⁷⁹ The FCC, in its implementation of the Act, determined that this requires that only providers that meet the definition of supported services be eligible for universal service support.⁸⁰

In a setting of regulated monopoly, requiring carriers to offer services that meet certain standards may be reasonable, but it should not preclude them from offering alternative plans to consumers. As long as additional offerings do not affect the price of the basic service, consumers would only choose the alternative offering if it made them better off. Thus, if the carrier wanted to market a lower quality service it would have to offer the service at a discount. The same reasoning can be applied to disbursement of universal service funds.

In the Universal Service Order, the FCC defined supported services to be very similar to the current offerings of regulated incumbents.⁸¹ If the incumbent made available a new, lower quality, offering it would not be subsidized. This makes consumers worse off. Consumers would only choose the lower quality offering if it were offered at a price that compensated them for the reduction in service. Because lower quality services are not subsidized, the relative prices of such offerings are artificially high and consumers are denied these choices.

By broadly defining the services that qualify for support, the FCC and state regulators could allow consumers to choose from a

78. It should be clear that the subsidy to carrier problem is not limited to high cost customers, but also to subsidize low income consumers as well.

79. See 47 U.S.C. § 254(b).

80. *Universal Service Order*, para. 61.

81. As discussed above, the FCC determined that eligible carriers must offer single-party voice-grade service that includes a local usage component. See *id.* para. 67.

wide variety of telecommunications plans and pick the one that best suits their needs. This would not only better serve customers, but also provides the opportunity for more competition in high-cost areas. For example, a fixed wireline service with unlimited calling would have to compete with other similar plans, measured service offerings of wireless carriers and, possibly lower quality (for now), IP voice over cable systems. There would be no need for regulators to adjust how subsidies are determined under such a regime. Prices would reflect service quality and consumers would only choose a particular plan if it offered them the best package for the money. Thus, carriers would not be allowed to "pocket" the differences in cost between the high and low-quality services, but would be forced to reduce the prices of low-quality offerings transferring the benefits to consumers. The size of the universal service program would be unchanged and consumers would be better off.

Allowing a broad range of offerings, however, presents several problems for regulators. First, The FCC determined that it would continue to support all lines, including secondary lines.⁸² Because individual consumers may choose to subscribe to more than one offering, and all plans would be supported, the size of the universal service program may grow rapidly if competition leads to differentiated offerings and consumers subscribe to multiple offerings. A politically troubling aspect of supporting multiple connections with broadly defined supported services is that the universal service plan would subsidize secondary mobile phones and voice offerings delivered over cable, which could include video. The obvious solution to this problem is to make customers certify, much like they choose long-distance companies, the carrier that is their universal-service provider and limit support to a single connection.⁸³ This would be equivalent to giving the subsidy directly to consumers, who would then decide which company receives the support.

Because such a plan is likely to increase the amount of competition in rural areas, incumbent carriers will not to support it. Rural constituents may oppose the plan because support would be limited to a single connection. Regulators may also oppose such a plan because increased competition would decrease government control over the marketplace.

82. *See id.* para. 96.

83. The Joint Board recommended that support only go to primary connections, but the FCC determined that all lines would continue to be supported until the new forward-looking mechanism is implemented, at which time it will address this issue. *See id.*

In addition to the pro-competitive benefits such a change could create, this change could allow a better targeting of the subsidy to achieve the true goal of universal service. A true universal service program would be designed to ensure that all people have access to telecommunications services. This implies that only those in danger of "falling off the network" if they are forced to pay rates that reflect costs would be subsidized. By taking the logical step of directly subsidizing consumers, rather than companies, the system would be truly explicit.

This would expose the fact that the current universal service program asks low-income subscribers in low-cost, primarily urban, areas to pay telecom taxes to subsidize customers in rural areas, including those with substantial incomes. With the more evident subsidies paid to subscribers, there might be additional pressure to radically change the system. Supporters of universal service, however, do not desire such transparency. The constituencies opposing these changes would be different than those who fear additional competition. In this case, it is the high-income people in the rural areas and their elected representatives (who are disproportionately represented in the Senate and especially on the Senate Commerce Committee) who would oppose the change.

Crandall⁸⁴ and Faulhaber⁸⁵ investigate why a majority of voters might not want the efficiency enhancing effects of rate rebalancing, where, in total, long distance rates are reduced by the amount that offsets any increase in local rates. Essentially, they come to the same conclusion—the skewed nature of long distance telephone demand means that most people will pay a small amount more for overall service if rates were rebalanced, while heavy users of long distance will experience large savings.

B. Eliminate Separations

The second obvious change that follows from our analysis is to eliminate separations. A unified federal and state system would eliminate the wasteful work that is necessary to allocate common

84. R. W. Crandall, *Telephone Subsidies, Income Redistribution, and Consumer Welfare*, in A COMMUNICATIONS CORNUCOPIA 400-20 (R.G. Noll and M.E. Price eds., 1998).

85. G. R. Faulhaber, *Voting on Prices: The Political Economy of Regulation*, in INTERCONNECTION AND THE INTERNET: SELECTED PAPERS FROM THE 1996 TELECOMMUNICATIONS POLICY RESEARCH CONFERENCE (G. L. Rosston and D. Waterman eds., 1997).

costs between jurisdictions.⁸⁶ More importantly, eliminating separations would eliminate the competitive arbitrage opportunities they create. Once again, there is a group that would be opposed to this. These are the federal and state regulators who would stand to lose power. Currently, even though they share power, each has the ability to create certain types of charges to further their own aims. Because eliminating separations would possibly force regulators to give up this power, neither federal nor state regulators are likely to support such a change.

Bell Atlantic proposed a possible compromise. Instead of continuing to examine all expenditures and categorize these into the interstate or intrastate jurisdiction each year, Bell Atlantic proposed that regulators should simply pick a percentage that would be applied to all expenditures.⁸⁷ Such a solution would have to be applied to revenue also and to competing carriers as well as to incumbent carriers. This solution is similar to the FCC's safe harbor for wireless carriers, where a certain percentage of wireless revenues were determined to be interstate for purposes of paying universal service taxes.⁸⁸

C. Get Rid of Arbitrary Service Categories

In addition to sounding the death knell for separations, a truly efficient universal service program would do away with arbitrary service category distinctions. Not only can there be no tax-related differences between highly substitutable services, but regulators must be aware of the possibility of bundled offerings. Bundling may occur for at least two reasons — consumer demand for bundles or cost savings associated with bundled offerings. This latter reason should not be driven by artificial tax differences.

To ameliorate these problems would probably require significant political changes. First, taxes would have to be assessed on a broader scale, but it is unclear where that boundary should begin and end. For example, if voice over cable systems is taxed, should all cable revenues be taxed? If not, there is an incentive to shift revenues away from the voice product and toward the other products. If so,

86. We should note that one of the authors was employed by the separations department of a regional Bell operating company for four days before quitting in frustration.

87. See *Comments of Bell Atlantic* in response to Jurisdictional Separations Reform and Referral to the Federal-State Joint Board, CC Docket No. 80-286, filed December 10, 1997.

88. See discussion above.

provision of voice services by cable systems is discouraged.

The logical conclusion of this is that universal service should be funded by a general revenue tax rather than through a tax on an artificially defined subgroup of the economy.⁸⁹ Some will argue that because of "network effects," a tax on telecommunications revenues is justified. It is not clear, however, whether this argument is accurate. First, with telephone penetration at 94 percent, it is unclear that there is a large market failure that needs to be corrected. Second, we are unaware of any estimates that measure the importance of the network effects in telecommunications. Finally, consumers base decisions to purchase a service based on the total surplus they receive from it. Artificially increasing the price of services, such as long distance, decreases the net value consumers receive from connecting to the network.⁹⁰

General revenue funding of universal service raises a couple of questions. First, it is extremely unlikely politically. Politicians have little desire to make the implicit telephone tax truly explicit because this will expose its inefficiencies and inequities.⁹¹ In particular, the funding of high-income households is likely to come under more pressure, increasing the number of calls to reduce the size of the program, which threatens rural Senators. As a result, while a general revenue tax is superior to the current implicit and narrow telephone tax, it is unlikely to garner the necessary support. However, if the current system is exposed and representatives of districts who are funding the system are made aware of the amount of money transferred to other jurisdictions, there may be a movement to reform the current universal service program.

A more politically feasible solution, that ameliorates several of the problems discussed above, but still requires arbitrary determinations by regulators, is to base universal service taxes on connections to the public switched network. While this would eliminate a portion of the problems associated with arbitrary service-category and jurisdictional definitions real questions remain about how to define a connection. For example, while it is relatively easy to define simple voice grade connections, how would regulators go

89. See J. HAUSMAN, *TAXATION BY TELECOMMUNICATIONS REGULATION* (National Bureau of Econ. Research Working Paper No. W6260, November 1997).

90. J. Hausman et al., *The Effects of the Breakup of AT&T on Telephone Penetration in the United States*, 83 AM. ECON. REV., May 1993 at 178-84.

91. Even though the Act requires that all subsidies be made explicit, there was a significant political uproar when AT&T and MCI attempted to make their direct contributions explicit line items on end user telephone bills.

about defining connections using more advanced services, such as digital subscriber loops that provide more than one voice path to the switched network. Another problem arises with determining the number of connections associated with dedicated access for customer premise equipment, such as private branch exchanges. Thus, while taxing connections will eliminate artificial interstate and intrastate distinctions, arbitrary definitions of what constitutes a connection would likely lead to arbitrage opportunities as digital technology and compression increase the number of paths to the network through a single connection.

D. Investigate Auctions

One additional solution that should be investigated is the use of auctions. Essentially, regulatory authorities could conduct a procurement auction to determine the amount firms are willing to accept to offer a detailed set of services (e.g., dial tone, minimum quality of service, a certain amount of local calling, access to long distance, with the same caveats discussed above to ensure the requirements as minimally intrusive as possible). In the simplest case, a firm might submit a bid saying it is willing to serve all customers in a given area for \$50 per month. If regulators determined that these customers should pay no more than \$30 per month for the supported services, the firm would be given a subsidy of \$20 per month, per subscriber. The firm would take into account all of the profits it could garner from the customer from additional services (if it could provide voice mail, long distance, etc.) when making its bid. For example, the firm may find that it would cost \$60 to provide the supported services, but they expect \$10 in profits from other services so they would be willing to provide the supported services for \$50 per subscriber. In this way, the marketplace would determine the amount necessary to provide service to the customers in the area.

There are some complications that must be addressed, however, before auctions could be used for universal service. The bidding system described above assumes that there is competition in the bidding and that winners obtain the exclusive right to service the area, at least to receive the subsidy. A number of firms have proposed to the FCC more complex methodologies that attempt to address these problems.⁹² These proposals attempt to create procurement auctions

92. See, e.g., ex parte presentation of Paul Milgrom on behalf of GTE Services Corp., March 19, 1997; ex parte presentation of Jeremy Bulow and Barry Nalebuff on behalf of Ameritech Corp., March 19, 1997; ex parte presentation of Alfred Kahn and Timothy

without exclusivity that still provides bidders with the incentive to minimize the amount of subsidy required.

While GTE and others have been pushing these ideas for more than two years, there has been little progress made at the FCC or in state regulatory proceedings. This may be because of a limited constituency, or lack of perceived interest at the FCC. The FCC has devoted significant resources and some of their brightest economists to the effort to modify cost models. This has so far been an incredibly time consuming and resource-intensive process. If the FCC were to devote resources to the auction, it might be perceived as a lack of confidence in the cost model process, even though many auction proposals rely on cost models to set maximum subsidies. Also, firms may not want to lobby heavily for auctions because they fear this will be perceived as an effort to undermine the FCC's cost-modeling efforts. Finally, if the auctions were to work as efficiently as one would hope, the rents from serving high cost areas would be reduced and firms serving high-cost areas would oppose such a proposal.

Auctions may provide an alternative that not only uses marketplace competition to determine subsidies and efficient provision of services, but they also may provide a mechanism to reduce the level of the subsidies that are absent from any other universal service program currently under consideration.

Conclusion

Universal service is an arena ripe for policy change. Regardless of one's views on the efficacy of universal service, these policies will have a large effect on the development and efficiency of telecommunications markets. As we have discussed, universal service has been used to justify economically irrational pricing policies that affect virtually every aspect of telecommunications regulation. Thus, implementation of the new universal service programs will have widespread effects on the marketplace. Contrary to other times in the history of telecommunications regulation, widespread entry into local markets, which will eat away at any remaining cross subsidies, is allowed. Regulators' insistence to rely on irrational pricing schemes is not sustainable under the new competitive regime. Because of the large amount of money at stake, universal service programs will have a large impact on carriers' decisions of which markets to enter, the services to provide and how to market their services. Regulators

must therefore be keenly aware of the effects their regulations have on carrier incentives to make sure that market forces, not their rules, determine how consumers will be served.

There are two basic paths regulators may follow to minimize the effects of their universal service policies. They can either reduce the amount of money at stake or make it difficult for carriers to take advantage of any regulatory-induced arbitrage opportunities that arise. We have attempted to identify several of the problems regulators will encounter if they attempt to minimize the distortions a universal service program will inevitably create and the political difficulties associated with our proposals. In essence, these are temporary fixes. While it may not be feasible in the immediate future, a long-term solution is to develop a true low-cost universal service program designed to keep people on the network. In the interim, regulators should be considering how best to ratchet down the size of the program over time. When adopting the new program, regulators should include a clear framework that details how the size of the fund will be reduced over time as new technologies are adopted and the cost of providing service falls. A better solution economically would be to fund the program explicitly through non-distortionary taxes, but such a program is unlikely to pass political muster in today's climate.⁹³

Universal service is not unique in the problems it presents. There is a lot of money at stake, which gives companies the incentive to position themselves to minimize their payments and maximize their payouts. Politicians, whose constituents benefit the most from universal service will be vocal, while those whose constituents lose out under the program are unlikely to oppose it vigorously because the costs are not visible and are spread out over a large number of voters.

Changing technologies, the introduction of competition and an uncertain regulatory landscape makes the future of telecommunications markets highly uncertain. Regulators are in the difficult position of trying to write rules that not only foster efficient outcomes but must also attempt to fulfill the social goals associated with the Act's universal service requirements. This must be done under a dual-jurisdictional framework where the goals of state and federal regulators are not always aligned. Given these difficulties,

93. In fact, during the writing of this article, Senator Stevens of Alaska, a state that benefits from generous funding for high cost areas, said that he opposed a proposal for specific line items on consumers' bills. See NECA WASHINGTON WATCH, 3/26/99.

regulators must be aware that their rules will have a large impact on carrier incentives. As regulators write rules, firms will seek to take advantage of those rules. Regulators should understand the competitive effects of their decisions as well as the goals that they claim to be trying to achieve.