

NOTE

**Universal Service High-Cost Subsidy
Reform: Hindering Cable-Telephony
and Other Technological
Advancements in Rural and Insular
Regions**

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I. INTRODUCTION

Policymakers advanced the concept of universal service in an effort to ensure that all United States citizens receive widespread access to affordable telecommunications services. In developing the initiative, the Federal Communications Commission (“FCC”) identified various areas that the universal service program should target, such as high-cost and rural areas. Regions that have fewer customers over which to spread fixed costs, and other factors such as less technologically advanced networks and rugged terrain, have inherently higher service costs. The universal service program provides subsidies to high-cost regions to ensure affordable telecommunications services to citizens in these areas.

The FCC recently initiated an effort to reform the current universal service subsidy allocation system by implementing a computer model that determines eligibility for funding using specific cost inputs to calculate the cost of providing service to rural and insular areas. Although the initiative certainly has merits, the program determines eligibility for subsidies in a manner that will reduce the availability of universal service funding in certain high-cost regions. Without these subsidies, some high-cost areas will likely be excluded from technological advancements in the telecommunications industry. This Note explores the problems associated with high-cost subsidy reform, using recent developments in cable-telephony to demonstrate potential negative impacts.

This Note provides a general overview of universal service in Part II, followed by a brief discussion of reform efforts for funding high-cost areas in Part III. A general discussion of recent innovations in cable-telephony follows in Part IV, along with reasons why high-cost areas will likely be excluded from these and other technological innovations, especially in light of the recent reform efforts. The discussion then shifts to the disproportionate impact that the reform will likely have upon local service providers and to the reality that many high-cost areas will likely be offered fewer technologically advanced services while rates for other telecommunications services will remain high. This Note concludes in Part

V with recommendations for universal service reform, including the implementation of a specialized high-cost technology subsidy.

II. BACKGROUND ON UNIVERSAL SERVICE

“Universal service” refers to a public policy initiative designed to provide widespread access to telecommunications services. Ensuring that high-cost areas receive access to telecommunications services and technology provides great social benefits, including enhanced educational opportunities, improved medical care, widespread availability of information, and increased economic competitiveness.¹

Most simply defined, universal service is an intertwined web of state and federal programs and regulations designed to promote affordable access to telephone and other telecommunications services through a series of subsidies.² Originally, the program only targeted widespread residential telephone service,³ but the nation’s entry into an increasingly complex and digitized era has presented many interesting opportunities to expand universal service to other telecommunications technologies, such as cellular telephones, cable television, and the Internet.

Although the fundamental concepts behind universal service emerged prior to congressional action,⁴ statutory provisions form the basis for universal service today. Congress first discussed the principles of what is now referred to as universal service in the preamble to the Communications Act of 1934 (“1934 Act”), a statute primarily designed to affirm federal authority over the telecommunications industry. Although the term “universal service” never specifically appeared in the 1934 Act or in the corresponding congressional records, the preamble provided a strong affirmation of the concept—“For the purpose of regulating interstate and foreign commerce in communication by wire and radio so as to make available, so far as possible, to all the people of the United States . . . [a] Nation-wide . . . communication service with adequate facilities at reasonable charges.”⁵ This preamble provided the conceptual framework

1. See Allen S. Hammond, *Universal Access to Infrastructure and Information*, 45 DEPAUL L. REV. 1067, 1068 (1996).

2. Markenzy Lapointe, *Universal Service and the Digital Revolution: Beyond the Telecommunications Act of 1996*, 25 RUTGERS COMPUTER & TECH. L.J. 61, 63 (1999).

3. See Arturo Gandara, *Equity in an Era of Markets: The Case of Universal Service*, 33 WAKE FOREST L. REV. 107, 109 (1998).

4. See Mark P. Trincherio and Holly Rachel Smith, *Federal Preemption of State Universal Service Regulations Under the Telecommunications Action of 1996*, 51 FED. COMM. L.J. 303, 305 (1999).

5. Communications Act of 1934, ch. 652 § 151, 48 Stat. 1064, (codified at 47 U.S.C. § 151 (1994)).

for what would later be defined as “universal service.”

The Telecommunications Act of 1996 (“1996 Act”) provides the modern statutory basis for universal service. Prior to the 1996 Act, universal service was funded in a piecemeal fashion through various subsidies collected from long-distance companies and other interstate services.⁶ The primary purpose of the 1996 Act was to implement a competitive market system in place of the prior monopolistic system.⁷ Most importantly, however, the 1996 Act codified and provided congressional support for all of the definitional aspects of the universal service program.⁸ In section 254 of the 1996 Act, Congress failed to offer a definition for universal service, but mandated that the FCC establish a Federal-State Joint Board to make recommendations for the program and further define the concept so that the agency could execute a comprehensive universal service program.⁹

The universal service program functions as a cooperative effort between the individual states and the federal government. The individual states may independently develop separate universal service programs as long as the provisions do not conflict with the FCC’s general rules governing subsidy allocation and find support in “specific, predictable, and sufficient mechanisms . . . that do not rely on or burden [f]ederal universal service support mechanisms.”¹⁰ In addition to adopting separate universal service programs, states are also free to exceed the federal standards, add services, and adopt further definitions and standards.¹¹

III. UNIVERSAL SERVICE REFORM AND FUNDING HIGH-COST AREAS

The 1996 Act expresses a fundamental commitment to encourage competition in rural and high-cost areas so that customers in these regions will receive the same benefits as their urban counterparts. Section 254 of the 1996 Act mandates:

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 . . . that are reasonably comparable to those services provided in urban areas and

6. Jean L. Kiddoo and Anthony A. Hansel, *The Aftermath of the 1996 Telecommunications Act: A Survey of the Laborious Road to Effective Local Exchange Competition - The Competitive Perspective*, 544 PLI/PAT. 117, 135 (1998).

7. Lapointe, *supra* note 2, at 71.

8. See Gandara, *supra* note 3, at 112.

9. See Lapointe, *supra* note 2, at 71.

10. Telecommunications Act of 1996, 47 U.S.C. § 254(f) (Supp. IV 1998).

11. See Trinchero and Smith, *supra* note 4, at 307.

that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.¹²

Accordingly, as part of its *Universal Service Order* issued on May 8, 1997, the FCC included consumers in high-cost regions¹³ among the four categories eligible for universal service support.¹⁴

As discussed in Part II, subsidies support the programs, shifting some of the costs associated with providing service in high-cost areas to customers in lower-cost regions.¹⁵ The federal Universal Service Fund currently offers subsidies to telecommunications providers serving high-cost regions, but the Federal-State Joint Board has recommended that the FCC revise the present system for determining a carrier's eligibility to receive these high-cost subsidies.¹⁶

On June 14, 1999, the FCC announced specific proposed changes to the universal service subsidy allocation system,¹⁷ intended to increase competition in high-cost areas through a \$230 million increase in subsidies.¹⁸ The new system makes both competitive external providers and established local companies eligible for subsidies in an effort to bring improved service and telecommunications technology to high-cost areas.¹⁹ In revising the current subsidy allocation system, the FCC also approved a proposal to make high-cost subsidies "portable." In other words, if a customer decides to change local exchange carriers, the new carrier would

12. 47 U.S.C. § 254(b)(3).

13. For the purposes of this Note, "high-cost regions" are defined as areas where the cost of providing telecommunications service substantially exceeds the national average. The FCC redefined eligibility for high-cost funding in the subsidy allocation reform. Under the new system, a carrier can only receive high-cost subsidies for services rendered in a particular state if the "carrier's average cost of providing service in [that] state exceeds 135% of [the] national average per line." *FCC Approves Increase in Universal Service Funding*, COMM. DAILY, Oct. 22, 1999. See also *FCC Adopts Computer Model for Calculating Universal Service Costs*, COMM. DAILY, Oct. 23, 1998, at 1.

14. Kiddoo and Hansel, *supra* note 6, at 130.

15. Lapointe, *supra* note 2, at 74. Long-distance carriers such as AT&T, MCI WorldCom, and Sprint currently finance most high-cost subsidies. These costs in turn are passed on to consumers in the form of long-distance access fees. See *FCC Increases Aid for Rural Phone Services*, N.Y. TIMES, Oct. 22, 1999, at C8.

16. *FCC Approves Increase in Universal Service Funding*, *supra* note 13.

17. The FCC formally announced the proposed changes to the high-cost subsidy allocation system in the June 14, 1999 edition of the *Federal Register*, requesting comments and feedback on these reform efforts. Fed.-State Joint Bd. on Universal Serv.; Forward-Looking Mechanism for High Cost Support for Non-Rural LECs, 64 Fed. Reg. 31,780 (proposed June 14, 1999) (to be codified at 47 C.F.R. pts. 36, 54, 69) [hereinafter Forward-Looking Mechanism].

18. See Peter S. Goodman, *FCC May Hike Phone Subsidies; Long-Distance Customers Would Finance Aid to Local Firms*, WASH. POST, Oct. 21, 1999, at E3.

19. See *id.*

be eligible to receive the subsidies associated with that user's line.²⁰ In theory, this system fosters competition, allowing new carriers to infiltrate these high-cost regions and qualify for high-cost subsidies.

In an effort to convert the system to "an explicit, competitively neutral, and sustainable mechanism"²¹ for allocating subsidies in high-cost regions, the FCC is in the process of employing a "cost methodology based on forward-looking economic cost[s]"²² instead of the former "embedded cost" model. The previous system determined subsidies using account ledger figures from the individual telecommunications providers requesting support. The new computer model will calculate cost estimates using concrete cost inputs.²³

The new model will enable the FCC to design more efficient networks based upon the geographic location of customers and necessary upgrades in infrastructure. Using this model, the FCC can input cost variables, such as network components, into the system to estimate the forward-looking costs of providing telecommunications services to these high-cost areas. From these data, the FCC will determine in which geographic regions carriers will be eligible to receive subsidies.²⁴ The FCC has declined to reveal any of the cost estimates calculated in the early phases of the modeling,²⁵ but critics have suggested theories about how the new system will adversely affect high-cost regions.

One of the biggest criticisms of the new system is that it determines carrier eligibility for subsidies on a statewide basis. Therefore, a carrier can only receive high-cost subsidies for services rendered in a particular state if the "carrier's average cost of providing service in [that] state exceeds 135% of [the] national average per line."²⁶ The problem is that calculating the cost of phone service in rural and high-cost areas is notoriously difficult, and the FCC has even acknowledged this potential uncertainty in the system.²⁷

Under the former "embedded cost" system, carriers in nineteen states and Puerto Rico were eligible to receive high-cost universal service subsidies. The new forward-looking cost model will only make subsidies

20. *FCC Approves Increase in Universal Service Funding*, *supra* note 13.

21. Lapointe, *supra* note 2, at 74.

22. *Id.*, quoting Nicole L. Millard, *Section 254 of the Telecommunications Act of 1996: A Hidden Tax?*, 50 *FED. COMM. L.J.* 255, 264 (1997).

23. Goodman, *supra* note 18, at E3.

24. *FCC Adopts Computer Model for Calculating Universal Service Costs*, *supra* note 13, at 1.

25. *Id.*

26. *FCC Approves Increase in Universal Service Funding*, *supra* note 13.

27. See *FCC Adopts Computer Model for Calculating Universal Service Costs*, *supra* note 13, at 1.

available to carriers in seven states,²⁸ and the region eligible for the most support under the current system, Puerto Rico, will not receive any high-cost subsidies under the new cost model.²⁹ As stated, the new system will only allow carriers whose average cost per line exceeds 135% of the national average to be eligible for subsidies in that particular state, and, therefore, many carriers who currently qualify for this funding will be excluded following the reform.³⁰ Determining eligibility on a statewide basis poses potential problems, especially for smaller carriers covering high-cost regions in ineligible states.³¹

In moving toward this new approach for calculating universal service subsidies, the FCC also voted on a proposal to estimate forward-looking costs for network components, including cable and switches.³² This action signaled the FCC's intentions to extend the subsidy allocation system to other aspects of the telecommunications industry. Because telecommunications services will likely become more closely intertwined in the future, the new system may impede technological advances, such as cable-telephony and bundled service packages, in high-cost and rural areas.

Technological advancements in the telecommunications industry continually challenge universal service and efforts to ensure that all Americans have access to comparable services at competitive prices. Implementing new technology generally reduces costs and provides higher-quality service for customers because updates make systems more efficient; consequently, carriers may pass these savings on to consumers. Technological advancements executed in low-cost areas further polarize consumers' telecommunications access, as urban areas receive improved service at lower rates. Meanwhile, service in rural and insular areas deteriorates, creating a situation where the rich get richer, and the poor get poorer. Following the universal service high-cost subsidy reform, many potential problems will likely arise with the advent of new technology. The problems associated with the reform typically accompany most advancements in telecommunications technology, but for purposes of illustration, this Note focuses on the potential negative impact that the cable-telephony revolution will likely have on high-cost regions.

28. Alabama, Kentucky, Maine, Mississippi, Vermont, West Virginia, and Wyoming will be eligible for funding under the new forward-looking cost model. *FCC Approves Increase in Universal Service Funding*, *supra* note 13.

29. *Id.*

30. *See FCC Approves Increase in Universal Service Funding*, *supra* note 13.

31. *See infra* Part IV for arguments supporting this theory.

32. *FCC Approves Increase in Universal Service Funding*, *supra* note 13.

IV. CABLE-TELEPHONY EXEMPLIFIES POTENTIAL PROBLEMS WITH HIGH-COST SUBSIDY REFORM

Recent advancements in cable-telephony illustrate the disparity between high-cost service areas and the rest of the nation, and the adverse effect that the FCC's new subsidy allocation system could potentially have upon the telecommunications technology available to customers in high-cost areas. The cable industry's entry into the telecommunications services marketplace provides an opportunity for customers nationwide to receive improved services at decreased rates, but misguided reform efforts will likely exclude consumers in high-cost regions from these technological advancements.

A. Background on Cable Entry Into the Telecommunications Industry

An expansion in circuit-switched cable-telephony offerings has provided new opportunities for competition and raised questions about the implications that this technological innovation will have upon universal service, especially in light of the new subsidy allocation system. The cable industry has recently expressed a heightened interest in entering the telecommunications service market. As a result, cable companies nationwide have become certified as competitive local exchange carriers, providing local telephone service to residences and businesses in more than forty states.³³

As with the implementation of any new telecommunications technology, only larger-scale cable companies providing services to densely populated areas have started to tap into the telephone service market. Cox Communications, Cablevision, MediaOne, Jones Communications, TCI, Time Warner, and Comcast are among those in the industry currently offering telephone service to customers in lower-cost regions.³⁴ San Diego, California; Hartford, Connecticut; and Phoenix, Arizona are among many urban areas nationwide now offering telephone access over broadband cable wire.³⁵

The process of upgrading networks and systems has proven to be time-consuming and costly. For instance, Cox Communications spent more than four billion dollars over a seven-year period upgrading its networks and systems.³⁶ Improving systems and networks in high-cost regions proves to be much more expensive for cable companies and other service

33. See Alexandra M. Wilson, *Cable Provision of Telecommunications Services*, 551 PLI/PAT. 279, 281 (1999).

34. *Id.* at 281-82.

35. *Id.*

36. *Id.* at 281.

providers due to the high cost of executing upgrades in areas with rugged terrain and fewer customers over which to spread fixed costs.

Technological advancements in cable-telephony are spreading quickly. For instance, Cox Communications, a cable-telephony service provider, estimated that at the end of 1999 the company would have more than one hundred thousand cable-telephony subscribers and 1.5 million telephony-equipped households, representing an increase from twenty-eight thousand telephony subscribers and six hundred thousand cable-telephony-ready residences from the previous year.³⁷ Cable-telephony subscribership will likely continue to increase as service becomes more widely available and prices decrease.

Cable-telephony providers generally offer services at costs significantly lower than traditional telephone carriers. For instance, Cox Communications's customers receive cable-telephony services at rates approximately forty-five percent less than traditional telephone service, and Cablevision offers consumers services at rates fifteen percent below those of conventional local exchange carriers.³⁸ As the networks become increasingly updated, more telecommunications providers likely will start offering combined service packages at competitive rates, improving services and decreasing costs for eligible consumers. Jones Communications even currently offers a combined cable and telephone package deal for less than forty dollars a month.³⁹

Based upon pending technological updates and progress, the cable industry has predicted that telephony services will produce four billion dollars in annual revenue by 2004.⁴⁰ Although cable-telephony and other technological advancements provide improved services for many customers nationwide, these inevitable changes in telecommunications present interesting challenges for universal service. The FCC must balance the often-competing interests of the telecommunications industry and residents of high-cost areas, while defining the degree to which the government should interfere with free market forces to help provide cost-efficient and technologically advanced services to these regions.

B. High-Cost Areas are Likely to Be Excluded From Cable-Telephony

Understandably, cutting-edge technological advancements in the

37. *Id.*

38. *Id.* at 281-82.

39. *Id.* at 282.

40. *Id.*

telecommunications industry emerge first in urban and suburban areas where subscribership is larger and the cost of updating systems significantly less. The cable-telephony revolution provides one example of how high-cost areas are less likely to receive the benefits associated with technological advancements in the telecommunications field and demonstrates how the FCC has misdirected its efforts in the recent universal service reform.

Many predict that cable-telephony will revolutionize how consumers receive telecommunications services, especially as systems become better equipped to provide bundled services. Cable-telephony consumers will not only receive services at reduced costs; they will also benefit from the high-tech systems improvements necessary to implement this service, as well as the convenience of interfacing with only one telecommunications company. Whether the current universal service system will maintain comparable and cost-competitive services in high-cost areas following this and other technological revolutions remains to be seen. High-cost areas likely will not benefit from the telephony revolution because of older infrastructure, carrier favoritism to densely populated areas, and the disproportionately negative impact of subsidy reform on the local carriers serving these areas

1. Poor Infrastructure and the Cable-Telephony Challenge

In most cases, high-cost areas lack the infrastructure necessary to update systems for cable-telephony service. In some areas, even basic cable infrastructure does not exist, so carriers would need to develop networks in regions where customers are sparse and the cost of implementing service is high. Telecommunications service providers will rarely use the technology available to customers in urban and suburban areas to improve infrastructure in rural and high-cost areas. As an illustration, a study by the Environmental Protection Agency indicates that a disproportionate percentage of Native Americans in rural areas lack access to cable television and telephones,⁴¹ arguably because the cost of obtaining service is high due to poor infrastructure.

Where basic networks exist in rural and high-cost areas, systems are more likely to be older and less technologically advanced, making it difficult for carriers to upgrade and expand services.⁴² Many cable carriers

41. Only 22% of Native Americans living in rural areas have access to cable television. In addition, 39% of rural Native Americans have telephone service as compared to 94% of urban Native Americans. *See Did You Know. . .?*, COMPUTERWORLD, Dec. 20, 1999, at 49 (citing U.S. Environmental Protection Agency, *Assessment of Technology Infrastructure in American Indian Communities*, June 1999).

42. *See* Hammond, *supra* note 1, at 1068.

acknowledge that network systems are inefficient and outdated,⁴³ especially in rural and high-cost areas.

With the convergence of telephone and cable technology, the FCC needs to ensure that rural and high-cost areas receive necessary upgrades in infrastructure to keep up with technological advancements. Many are concerned that a pure free market system, without adequate subsidies or incentives, will leave these areas without telecommunications technology such as cable access and telephone switching stations,⁴⁴ or with systems that are outdated or inefficient. The universal service reform attempts to increase competition in high-cost regions through subsidies, but whether this program will improve the infrastructure in these areas has yet to be determined.

How the federal government's recent universal service reform will improve the telecommunications infrastructure in high-cost areas remains to be seen. Because only carriers in seven states will be eligible for high-cost subsidies following the FCC's reform, the infrastructure that currently exists will likely decline,⁴⁵ and most carriers will be unable to provide technologically advanced telecommunications services to these regions. The FCC must ensure that all carriers serving high-cost regions receive sufficient subsidies and incentives to fund necessary network improvements.

Aware of the problems posed by outdated infrastructure in rural and high-cost areas, some states are initiating programs to improve network systems.⁴⁶ For instance, in the state of Washington, Governor Gary Locke and legislators proposed a plan to deregulate telephone monopolies in an effort to encourage better telephone and Internet services in rural areas to attract high-tech companies to these regions.⁴⁷ According to Minnesota Planning Director Dean Barkley, "[w]ithout the infrastructure of an 'information superhighway,' the [rural] population . . . will decline even more sharply in the future than in the past."⁴⁸ Furthermore, critics argue that the recent reform efforts place an unfair burden upon the states to make

43. *See id.* at 1091.

44. *See* Mike Meyers, *A Call for Big Changes in Telecom: Ventura Offers Plans to Boost Competition and Spread Access*, MINNEAPOLIS STAR TRIB., Dec. 15, 1999, at 1A.

45. Some local carriers in rural areas are currently able to offer technologically advanced services simultaneously with their urban counterparts by using subsidies from the universal service high-cost fund. The universal service subsidy reform potentially jeopardizes local carriers by increasing competition and eliminating high-cost funding in all but seven states. *See FCC Approves Increase in Universal Service Funding*, *supra* note 13.

46. *See id.*

47. Justin Hopkins and David Postman, *Phone Deregulation Deal Offered; Legislative Plan Would Trade it for Better Rural Service*, SEATTLE TIMES, Jan. 14, 2000, at B1.

48. Meyers, *supra* note 44, at 1A.

up for the shortcomings imposed by these changes in the federal program.⁴⁹

2. Telecommunications Carriers and Urban Favoritism

In addition to concerns related to the infrastructure in rural and high-cost areas, many large telecommunications carriers have no interest in serving these regions. Large carriers likely will not offer cable-telephony and bundled service agreements to high-cost areas because telecommunications companies tend to favor areas with the highest profit margins, largest customer bases, and lowest set-up and operating costs.⁵⁰ As a result, customers in high-cost regions likely will not receive combined service packages and cable-telephony because they are primarily served by local telephone carriers, not the large multimedia telecommunications providers currently implementing such technology elsewhere.

Critics have argued that large telecommunications carriers purposely develop strategies to avoid providing services in remote areas.⁵¹ For instance, one commentator noted that US West (now Qwest) appeared to favor urban areas over high-cost regions,⁵² selling off many of its rural networks including sixty thousand lines in Montana.⁵³ Although installing lines in high-cost areas creates a substantial entry barrier to telecommunications carriers, the cost of maintaining outdated networks also poses financial challenges.

Despite incentives and subsidies to spur competition in rural and high-cost areas, large carriers continue to express minimal interest in entering the local exchange market, focusing their efforts upon more lucrative, higher-density ventures.⁵⁴ For instance, MCI WorldCom plans to secure its current long-distance services before entering the local exchange market, specifically avoiding rural and high-cost areas.⁵⁵

Many fear that a pure free market system, without a properly targeted subsidy allocation system, will exclude customers in high-cost areas from the "Information Age," leaving them unable to receive comparable services at cost-competitive rates.⁵⁶ Even with the FCC's proposed subsidy reform, however, some "consumer advocates doubt that local competition will

49. *Federal Universal Service Plan Could Harm Millions of Rural Phone Customers*, CAMBRIDGE TELECOM REP., Nov. 1, 1999.

50. See Ken Silverstein, *Technology Crops Up in Rural America*, UTIL. BUS., July 1999, available at 1999 WL 26736882.

51. *See id.*

52. *Id.*

53. *Id.*

54. *See id.*

55. *Id.*

56. See Meyers, *supra* note 44, at A1.

sprout outside wealthy urban areas, where competitors can recoup the costs of erecting new phone systems by spreading them over many customers.”⁵⁷ The FCC has misdirected its reform efforts, and will increasingly exclude consumers in high-cost regions from technological advancements in the telecommunications industry. Some of the larger telecommunications providers have already expressed distaste for the FCC’s reform efforts, indicating that the new rules will further discourage them from entering high-cost markets.⁵⁸ The FCC should focus its efforts upon providing better support to the smaller carriers that currently serve these areas.

Although most large telecommunications providers appear to have limited interest in rural and high-cost markets, loyal local carriers continue to offer service to these areas.⁵⁹ Approximately five million Americans receive their telecommunications services from one thousand independent carriers, operating fifty thousand or fewer telephone lines.⁶⁰ Ninety-five percent of those local carriers offer advanced services, such as Internet access, wireless service, or cable television,⁶¹ but the services are generally less technologically advanced than those available in urban areas.

In very few instances, the FCC subsidy reform may actually undermine universal service by jeopardizing local carriers and granting a large percentage of the subsidies to a few large telecommunications service providers.⁶² For instance, Mississippi’s regional conglomerate, Bell South Corporation, is expected to receive a large portion of the subsidies under the new funding reform.⁶³ In an effort to qualify for the subsidies without incurring the initial set-up costs, many large telecommunications carriers continue to merge with or purchase smaller, rural carriers.⁶⁴ With the new subsidy allocation reform in place, however, large telecommunications carriers will still be deterred from entering the high-cost market because most will qualify for less federal funding, even though a select few will be eligible for more subsidies.⁶⁵

57. Goodman, *supra* note 18, at E3.

58. For instance, Qwest Executive Vice President Mark Roellig told sources, “These new rules could tell large companies serving rural communities to stop investing in advanced telecommunications services in high-cost areas.” *Federal Universal Service Plan Could Harm Millions of Rural Phone Customers*, *supra* note 49.

59. *See id.*

60. *See id.*

61. *See id.*

62. *See* Goodman, *supra* note 18, at E3.

63. *Id.*

64. For instance, Bell Atlantic purchased NYNEX in 1997 for twenty-five billion dollars. Silverstein, *supra* note 50.

65. Following the subsidy allocation reform, Qwest will only be eligible for three million dollars in subsidies (all of which will go to services in Wyoming), as opposed to the

3. Disproportionate Impact on Local Carriers

With poor infrastructure and a lack of interest from larger carriers in serving high-cost areas, customers in these regions likely will not receive technological advancements, such as cable-telephony, at the same rate as their urban counterparts. The FCC's efforts to reform universal service funding present two interrelated problems with the new subsidy allocation program: (1) only carriers in certain states qualify for funding; and (2) the system fails to provide enough financial support for local carriers in these areas.

Telecommunications carriers will naturally favor system upgrades in lower-cost regions, given limited incentives to offer technologically advanced services in high-cost areas, unless enticing subsidies exist to equalize costs. Under the new model, only carriers in seven states will qualify for subsidies, and some of the regions that currently receive the most funding will not qualify under the new program.⁶⁶ One critic denounced the new model, arguing that "[t]he FCC has unfortunately decided that the Information Superhighway stops at the Mississippi River," referring to the fact that only limited subsidies will be available to carriers providing service to high-cost regions in the West.⁶⁷

An inadequate incentive program will cause customers in high-cost regions to receive disproportionately expensive, low-quality services. Furthermore, carriers likely will not offer consumers cutting-edge, technologically advanced services like cable-telephony. As discussed in Part IV, updating network systems for cable-telephony is an expensive endeavor, with telecommunications carriers like Cox Communications spending over four billion dollars on improvements in low-cost, densely populated areas.⁶⁸ Many of the smaller cable and telecommunications service providers in high-cost regions will not possess the financial resources to implement the improvements necessary for cable-telephony. In addition, system updates will cost more in high-cost regions due to rugged terrain, outdated networks, and fewer customers to absorb fixed costs.

In states where service providers do not qualify for funding under the new model, they will lack the financial capability to update their systems. As stated in Part III, carriers will only qualify for high-cost subsidies in seven states, where the average statewide cost of providing service exceeds

fifteen million dollars that it was eligible for under the previous system. Steve Fidel, *Western States on Short End of Subsidies, US West Says*, THE DESERET NEWS (Salt Lake City), Oct. 23, 1999, at B07.

66. *FCC Approves Increase in Universal Service Funding*, *supra* note 13.

67. *Id.*

68. Wilson, *supra* note 33, at 281.

135% of the national average.⁶⁹

Many rural carriers currently match the technological advancements available in urban areas by using subsidies from the high-cost Universal Service Fund,⁷⁰ and such improvements will not be financially feasible without these subsidies.⁷¹ Rural areas will likely lag behind the rest of the nation without widespread access to high-cost subsidies to fund updates and improvements. Implementing cable-telephony and other technological advancements will prove impossible for local carriers in ineligible high-cost subsidy states under the universal service reform.

Some might argue that residents in rural areas do not need cutting-edge technology and that society should not fund such upgrades for a small percentage of the population who make lifestyle trade-offs to live in rural areas. This argument clearly has some merit, but widespread technology leads to a better-educated workforce and well-informed citizenry. Technologically isolating residents in rural areas deprives them of the ability to compete at the collegiate level and in the metropolitan labor markets, should they choose to pursue such avenues later.

Most states have some combination of densely populated, urban areas and rural, sparsely populated regions. Thus, the FCC's new model for determining eligibility disproportionately disadvantages local carriers providing service to high-cost areas in states where they will be ineligible for subsidies. Larger telecommunications carriers will likely focus the majority of their efforts on improving systems in urban areas, where the return on their investment is higher. In addition, large carriers serving high-cost areas also generally cover urban communities, helping to offset costs.⁷² Furthermore, large telecommunications conglomerates often provide service in multiple states,⁷³ and may be eligible for subsidies in one state, but not another. This provides an incentive for large carriers to offer services only in urban areas or high-cost regions in states where they are eligible for subsidies.

As a result, the FCC's reform will have a disproportionately negative impact upon local carriers serving high-cost regions. Regional service providers will not be able to update systems as promptly or effectively in

69. *FCC Approves Increase in Universal Service Funding*, *supra* note 13.

70. Silverstein, *supra* note 50.

71. *Id.*

72. *See id.*

73. Many large telecommunications carriers are frustrated by the new subsidy allocation system. For instance, Qwest provides service in fourteen states, but the company will only be eligible to receive high-cost subsidies in Wyoming. *FCC Sweetens Pot for Phone Service; Millions of Extra Dollars Should Help Rural, High-Cost Areas Lower Their Rates*, THE SPOKESMAN REV. (Spokane), Oct. 22, 1999, at A18.

states where the average cost per line is too low to qualify for subsidies. Consequently, customers in high-cost areas will not be able to take advantage of cable-telephony and other technological innovations. The FCC needs to reevaluate the new system for subsidy allocation, focusing its efforts on improving subsidies for the regional carriers that presently serve these high-cost areas.

V. RESULTS AND ALTERNATIVE MEASURES

Without sufficient subsidies available to carriers in rural and insular areas, technological advancements in the telecommunications industry will likely bypass high-cost regions. Regional carriers serving these areas will suffer disproportionately under the recent subsidy allocation reform once the FCC decides to extend the program to smaller service providers. In an effort to ensure that technological advancements in the telecommunications industry extend to customers in rural regions, the FCC should consider developing specialized universal service funding that specifically subsidizes technological improvements and updates in high-cost areas.

A. The Result: A Lack of Comparable Service at Competitive Prices

Misplaced FCC reform efforts will likely cause the infrastructure in high-cost regions to become increasingly outdated and further encourage carrier favoritism for urban areas. As a result, cable-telephony and other telecommunications advancements will not benefit many customers in high-cost areas. In states where carriers do not qualify for high-cost subsidies, customers will continue to receive basic telecommunications access and technological improvements as service providers deem the updates financially advantageous. In urban and low-cost areas, implementing technological advancements usually becomes financially feasible at a faster rate.

Society as a whole benefits from ensuring that residents in rural areas receive access to cutting-edge technology. Arguably, residents in rural areas need access to technology more than individuals in metropolitan areas because they lack exposure to many of the cultural, educational, and medical resources available in urban areas. With each technological innovation implemented in low-cost regions, the telecommunications technology gap between high-cost areas and the rest of the nation will continue to grow.

The current cable-telephony revolution exemplifies this notion of increased disparity between regions. Once cable-telephony updates have been implemented universally in low-cost regions, consumers in urban

areas will receive a wider range of services at reduced costs.⁷⁴ As discussed in Part IV, telecommunications carriers can offer cable-telephony at rates up to forty-five percent less than traditional telephone service.⁷⁵ In addition to providing cheaper rates, this technology also offers customers more services through combined telecommunications packages, such as Jones Communications's dual cable and telephone service plan for forty dollars a month.⁷⁶ Technological advancements such as cable-telephony will continue to develop, providing cheaper and higher-quality services in urban areas at a comparatively faster rate than high-cost areas,⁷⁷ further increasing the disparity between regions.

The negative impacts that the reform will likely have upon technological advancements such as cable-telephony demonstrate that the FCC's efforts may create more problems than they will solve. The new universal service subsidy reform recently implemented by the FCC may undermine the 1996 Act and the fundamental concepts supporting universal service because customers in urban areas will receive increasingly better services at lower rates.

The reform efforts aim to update the subsidy allocation system to keep up with changing marketplace dynamics.⁷⁸ In an effort to achieve this goal, the FCC designed a computer model to calculate subsidies using forward-looking cost data, with the intent of achieving more accurate cost estimates.⁷⁹ The computer model itself is not the problem, but the reform will cause significant cutbacks in eligibility for carriers serving high-cost regions. The FCC's system provides more accurate cost estimates than the former system,⁸⁰ but the agency needs to ensure that the new allocation mechanism does not undermine the fundamental goals of universal service.

B. An Alternative: Technology Subsidies for Carriers in High-Cost Regions

The FCC should continue to utilize forward-looking cost data to calculate subsidy eligibility, but it should focus its efforts upon providing funding to high-cost areas and the regional carriers that provide their service coverage. The FCC has essentially increased the amount of

74. See Wilson, *supra* note 33, at 282.

75. *Id.* at 281.

76. *Id.* at 282.

77. See Wilson, *supra* note 33.

78. See Forward-Looking Mechanism, *supra* note 17.

79. Lapointe, *supra* note 2, at 74.

80. Goodman, *supra* note 18, at E3.

subsidies available to qualifying service providers in high-cost regions,⁸¹ but limited the number of carriers eligible for this funding. Although current reform efforts only presently apply to large and mid-size carriers,⁸² the FCC may expand the program to rural carriers after January 1, 2001.⁸³ When the FCC ultimately decides to extend the reform efforts to smaller carriers, it will challenge the efficacy of the universal service program in high-cost areas.⁸⁴

Local service providers, offering service to a limited number of customers within certain geographic areas of a given state, will be harmed most by the new allocation system. Because regional carriers cover most high-cost areas, the FCC needs to ensure that local service providers in these areas receive ample funding to continue providing comparable technologically advanced services at reasonable rates.

The FCC knows of the need for improved telecommunications technology in high-cost areas, and has solicited suggestions for encouraging wireless, cable, and other non-traditional, technologically advanced telecommunications services to penetrate rural and high-cost areas.⁸⁵ In an effort to ensure that high-cost areas do not miss out on the technological revolution, the FCC could implement a telecommunications technology subsidy available to all carriers (but designed primarily for small, rural service providers) applicable only toward technological improvements in high-cost and rural areas. For instance, if a carrier updates networks to make them cable-telephony accessible, then this specialized funding would cover a percentage of these improvements, making the technological improvement financially feasible. This is simply one of many mechanisms available for encouraging technological innovation in areas where market forces alone are incapable of ensuring technologically advanced telecommunications access.

The FCC should consider utilizing some of the recently appropriated funding to implement a specialized technology subsidy, applicable only to technological improvements in high-cost regions. Better yet, the FCC could generate a separate subsidy fund to cover technological improvements in these high-cost areas. This specialized subsidy would enable the FCC to maintain a certain national telecommunications technology threshold,

81. *See id.*

82. Reform efforts focus upon the large carriers such as Verizon as well as some medium-sized service providers such as Cincinnati Bell. *FCC Approves Increase in Universal Service Funding*, *supra* note 13.

83. *Id.*

84. *See id.*

85. *See FCC Adopts Computer Model for Calculating Universal Service Costs*, *supra* note 13.

which would ultimately lead to lower rates in these areas and widespread access to comparable services such as cable-telephony.

VI. CONCLUSION

In an effort to reform universal service funding, the FCC has launched a program designed to change carrier eligibility for high-cost subsidies. Determining eligibility on a statewide basis likely will adversely affect regional carriers providing service to high-cost regions in states where they are ineligible for funding. Without widespread access to subsidies, it will not be financially feasible for the carriers that serve these areas to implement technological advancements such as cable-telephony. Given the importance of widespread telecommunications technology to national progress, the FCC should redirect its focus and consider adopting a specialized subsidy, applicable only to technological improvements implemented in high-cost and rural areas.