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Joseph A. Post

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Cover Page Footnote

The author represented New York Telephone Company in proceedings before the New York State Public Service Commission relating to some of the subjects covered herein. Any views expressed in this discussion are, of course, the author's own.

UNIVERSAL SERVICE AND THE INFORMATION SUPERHIGHWAY: PERSPECTIVES FROM THE TELECOMMUNICATIONS EXPERIENCE

*Joseph A. Post**

INTRODUCTION

A key focus of attention in debates over the information superhighway or "National Information Infrastructure" ("NII") is the question of universal service;⁵⁰⁶ that is, the question of what role, if any, federal and state government agencies should play in assuring that the benefits of the NII are available to as wide a segment of the population as possible. A number of specific questions are included under the general rubric of universal service, including the following:

- What specific components of the NII should be brought within a special universal service policy framework? Need all the capabilities and functions of the NII be accessible to everyone, regardless of cost, or should the concept of universal availability only apply to a "core" set of capabilities and functions? If the latter, what criteria should be used in deciding what capabilities and functions are in this core?
- Once a decision is made to make some minimum level of NII resources (e.g., bandwidth) universally available, should similar treatment be given to any or all of the services that would be delivered over the NII? Do video games deserve the same solicitude as public library access or distance learning or medical care delivery systems? Where on the spectrum do topical electronic bulletin boards and chat lines fall?
- If public policy concerns are deemed to require the penetration of NII capabilities and services in areas beyond those that would be served by a free market, what steps should government take? Should companies deriving revenues from the NII (either as providers of parts of the network itself or as providers of services offered on such network) be required to assume an obligation to serve even unprofitable areas? Should the cost of serving such areas be spread among all NII service providers through the creation of a universal service fund? If so, how should the funds be collected and disbursed? Should the cost be spread broadly through society by some form of taxation?
- How will the structure of the NII "market" affect universal availability? To what extent should governments be involved in the construction, financing, ownership, or operation of NII facilities

* The author represented New York Telephone Company in proceedings before the New York State Public Service Commission relating to some of the subjects discussed herein. Any views expressed in this discussion are, of course, the author's own.

506. "Universal service" is a regulatory concept that holds that certain services are so important that they should be made universally available. If necessary, such availability should be ensured through appropriate governmental action.

or services? To what extent should private entities be involved? Should there be any restrictions on entry into or exit from this new "market"? Should there be a government-sanctioned monopoly, duopoly, or oligopoly; or does public policy require letting a thousand flowers bloom?

- To the extent multiple entities are involved in the construction and operation of the NII, how can workable interconnection between the various participants be assured?
- What does it take to make NII services and capabilities "available" (beyond the physical existence of the necessary facilities in a particular area)? What factors would prevent the use of physically available facilities by particular individuals or groups, and what, if anything, should be done to overcome those barriers?⁵⁰⁷ What role do language barriers, disabilities, and cultural factors play? Who should pay the cost of such ameliorative measures?
- If it is deemed important to make some services and capabilities universally available, how should they be priced? Should special (i.e., below market) pricing be available to everyone for certain services, or should such pricing only be available to the truly needy?

To some extent, these questions are identical to public policy issues that arise perennially in a wide variety of contexts.⁵⁰⁸

I. AN OVERVIEW OF TELECOMMUNICATIONS REGULATION

Despite the generality of the fundamental issues that are involved, any meaningful consideration of universal service in the NII context must be informed by an understanding of the facilities that will make up the NII, the services that will be provided over it, the private and/or public entities that will be providing those facilities and services, and the nature of existing laws and regulations affecting those entities. As a first step in this direction, this section of the Report undertakes a brief overview of regulation in the telecommunications industry, and shows how the issue of universal service has been addressed in the industry. It is hoped that this overview will provide a preliminary, if

507. Indeed, is the concept of a "barrier" even appropriate? Isn't it possible that some people actually prefer books to video screens, and face-to-face meetings to Internet chat lines? If so, is it really appropriate to expend public funds to encourage such people to change their preferences?

508. For example, these questions overlap with questions commonly asked concerning health care, such as: Should universal health care be guaranteed? If so, what forms of "health care" should be deemed to fall within the guarantee, and how and by whom should they be provided? Should health insurance be provided by private enterprise or by government, and if by private enterprise what if any regulation of prices and availability would be appropriate? Should dense urban areas be required to subsidize the provision of postal service to remote rural areas? Should social security be provided to everyone above a certain age, or only to those in need? To the extent a particular activity is deemed worthy of a public subsidy, how should the subsidy be collected? How should it be distributed?

incomplete, framework⁵⁰⁹ for evaluating universal service issues in the NII context.

A. *The Traditional Model*

Throughout much of the twentieth century, telecommunications services in the United States have been provided by regulated monopolies. The dominant provider—known informally as the Bell System—provided local telephone service, long distance service, and telephone equipment to almost the entire United States. The monopoly was considered to be a “natural” one; as one recent treatise states, “The high cost of fixed plant, the steadily declining average cost of service, and the need for all customers to interconnect with one another made it seem both sensible and inevitable to have a single monopoly provider.”⁵¹⁰

Such a monopoly market was associated with a regulatory environment which both protected the monopoly and constrained its conduct:

The old regulatory paradigm had three basic pillars. First, the *protected franchise*: would-be competitors were barred from competing or even interconnecting with the enfranchised carrier; natural monopoly thus became a self-fulfilling prophecy. Second, the *quarantine*: the monopolist was restricted to its regulated sphere and barred from exporting its expertise (and the corrosive influence of its monopoly) into adjacent competitive markets. Third, *cradle-to-grave regulation*: prices, terms, and conditions of the monopolist's services had to be sold to regulators before they could be sold to customers.⁵¹¹

The Bell System was regulated both by the federal government⁵¹² and state regulatory authorities. As a result of a political compromise embodied in the federal Communications Act of 1934,⁵¹³ federal regu-

509. Of course, the NII, in whatever form it ultimately manifests itself, will be an outgrowth of many existing industries, including entertainment, information processing, and consumer electronics. Nevertheless, the concept at the core of the NII is the delivery of information (in audio, video, data, and other formats) from one location to another, and thus the communications industry would be expected to play a significant role.

Although universal service has been somewhat less of a concern in the cable television area than in telecommunications, universal service-type concerns are reflected in some provisions of the Cable Communications Policy Act of 1984, Pub. L. No. 98-549, 98 Stat. 2779 (codified as amended in scattered sections of 15 U.S.C., 18 U.S.C., 47 U.S.C., & 50 U.S.C.), as amended by Cable Television Consumer Protection and Competition Act of 1992, Pub. L. No. 102-385, 106 Stat. 1460 (codified as amended in scattered sections of 47 U.S.C.) (1988 & Supp. V 1993). No attempt is made in this section of the Report to discuss either cable television regulation in general, or the application of universal service concepts to the cable television industry.

510. Michael K. Kellogg et al., *Federal Telecommunications Law* § 1.1, at 1 (1992).

511. *Id.* at 1-2.

512. The Interstate Commerce Commission and, after 1934, the Federal Communications Commission.

513. 47 U.S.C. § 151-613 (1988 & Supp. V 1993).

lation is, for the most part, limited to interstate communications, and state regulation is limited to intrastate communications.⁵¹⁴ The dividing line between the two jurisdictional spheres is hardly clear, and litigation over the precise scope of federal and state authority in particular areas has been frequent.⁵¹⁵

The predominant framework for regulating the rates (prices) charged by the Bell System was the traditional utility model of "rate of return" regulation, in which a utility is allowed to set its prices at a level sufficient to recover its expenses plus a "reasonable return" on its investor-supplied capital. This model only determined the overall "revenue requirement" of the utility; the question remained of allocating that requirement over the prices for specific services. The rate structures designed by telephone companies and regulators in the monopoly era were characterized by unnaturally low rates for some services and unnaturally high rates for others. The most important example was the maintenance of low prices for "residential exchange access" service, that is, the basic hookup between the residential customer and the telephone company, for which the customer paid a fixed monthly charge.⁵¹⁶ Telephone companies were able to maintain such low rates, and at the same time meet their overall revenue requirement, by charging higher rates for certain services, particularly long-distance and business services.⁵¹⁷ Although such rate structures resulted in prices that may have been inefficient in the technical, microeconomic sense, they probably did help to foster universal service by keeping the price of basic telephone service low. Indeed, according to March 1994 Census Bureau figures, 93.9% of the households in the United States have a telephone.⁵¹⁸

514. See 47 U.S.C. § 152(a), (b) (1988 & Supp. V. 1993); *Louisiana Pub. Serv. Comm'n v. FCC*, 476 U.S. 355, 358-59 (1986).

515. Kellogg, *supra* note 510, at 104-12.

516. The existence and exact amount of the "subsidy" for residential exchange access service has been a matter of intense dispute over the years. The dispute has mainly focused on how the "cost" of a telecommunications service should appropriately be measured.

517. Similar issues are raised by other services as well. Most telephone companies offer some form of discounted "Lifeline" service for low-income customers, generally at rates significantly below the normal residential exchange access rate. Emergency 911 service and Telecommunications Relay Service for the hearing-impaired are often offered on a below-cost basis. High cost rural areas have benefited from regulatory policies which mandate uniform rates for certain services, regardless of the cost of providing the service.

518. Alexander Belinfante, Federal Communications Commission, *Telephone Subscribership in the United States* 3, 6 (1994). According to the same report, 94.5% of the individuals in the adult civilian noninstitutionalized population have a telephone in their household. *Id.* at 28.

B. *The Rise of Competition and Its Impact on Regulation*

1. Background

As technology evolved, it became clear that at least some discrete aspects of the nationwide telephone system were not natural monopolies, and could support economic competition. Early initiatives, both in private antitrust suits and in regulatory proceedings, opened up to competition the market for consumer premises equipment (e.g., telephone sets and accessories) and, at least to some extent, the market for long distance services.

A watershed came in November, 1974, when the federal government filed an antitrust suit against the Bell System. The case went to trial in 1981, premised on the notion that the Bell System had unlawfully leveraged its monopoly on local telephone service into potentially competitive areas such as long distance service and equipment manufacturing. After the Government concluded its case, the court denied a defense motion to dismiss and the case was settled by entry of a consent decree, known in its current form as the "Modification of Final Judgment" ("MFJ"), which essentially provided for the breakup of the Bell System.⁵¹⁹

Under the consent decree, AT&T—the formal corporate embodiment of the Bell System—was required to divest itself of those subsidiaries that provided local exchange telephone service. The basic theory of the decree was to separate local telephone operations, generally still considered as something of a natural monopoly, from AT&T's potentially competitive lines of business. Thus, "leveraging" of market power from one line of business into another would be prevented. The divested subsidiaries organized themselves into a number of regional holding companies known as "Regional Bell Operating Companies" ("RBOCs"). For example, New York Telephone, which provides local telephone service in much of New York State, and New England Telephone and Telegraph Corporation, which provides such service in a number of New England states, became subsidiaries of a new entity known as NYNEX Corporation. AT&T, meanwhile, retained control of its former long distance and equipment manufacturing businesses.

Among the key provisions of the decree were ones prohibiting the RBOCs from entering into certain lines of business, such as information services, equipment manufacturing, and the provision of "interexchange" services.⁵²⁰ The purpose of those provisions was to prevent the RBOCs from leveraging their market power in the local services market into the proscribed lines of business. Some of the line of business restrictions—particularly the prohibition on the offering of "in-

519. *United States v. AT&T Co.*, 552 F. Supp. 131 (D.D.C. 1982).

520. For a further discussion of interexchange services, see *infra* text accompanying notes 522-23.

formation services”—have since been lifted,⁵²¹ although the restrictions on manufacturing and interexchange services remain.

The interexchange prohibition is essentially focused on keeping RBOCs out of the long distance business. To give the notion of long distance service more definite content, the nation was divided into more than 150 “Local Access and Transport Areas” (“LATAs”).⁵²² The RBOCs were forbidden by the MFJ from offering “interLATA” services; essentially, services that entail the transport of communications across LATA boundaries. To promote competition between long distance carriers (referred to in industry jargon as “interexchange carriers” (“IXCs”)), RBOCs were required to provide exchange access service to all IXCs on the same terms and conditions as those they applied to AT&T.⁵²³

The years following divestiture have seen an explosion in telecommunications technology. Technological advances—including digital switching, increased “intelligence” in terminal equipment, and fiber optics—have made it even more economical for competitors to challenge the incumbent local telephone companies’ supposed “natural” monopolies. Further, the formerly separate technologies of telephony, wireless communication, and video services have been converging. Voice communications can be carried by radio signals as easily as by wires; and video and data communications can be carried through the same facilities as voice traffic. The result of these technological developments has been furious activity by cable television companies, wireless companies, long distance carriers, and others eager to enter the telephone companies’ “traditional” markets. In many cases, potential entrants have sought to expand their capabilities through strategic alliances, such as the recent consolidation of AT&T and McCaw, a provider of wireless services.

In many states, and in the federal jurisdiction, regulators have actively encouraged competitive entry by eliminating existing regulatory

521. *United States v. Western Elec. Co.*, 767 F. Supp. 308, 327 (D.D.C. 1991), *aff'd*, 993 F.2d 1572 (D.C. Cir.), *cert. denied*, 114 S. Ct. 487 (1993).

522. *See United States v. Western Elec. Co.*, 569 F. Supp. 990, 993-94 nn.9-10 (D.D.C. 1983).

523. IXCs generally do not have facilities running to individual telephone customers. Instead, they carry calls between “points of presence” that they establish in each state. Transport of long distance calls between the calling or called party and the point of presence is provided by local telephone companies (e.g., RBOCs) through what the MFJ refers to as “exchange access” service. Thus, a long distance call from New York City to Chicago might be carried by New York Telephone Company to an MCI point of presence; MCI would then transport the call to an MCI point of presence in Chicago; it would be carried by Ameritech (the RBOC providing service in Illinois) to the called party.

In recent years, this model has broken down to some extent; IXCs now frequently bypass local telephone facilities by establishing direct connections between their points of presence and their larger business customers.

barriers.⁵²⁴ The following briefly discusses some of the areas where competition has emerged in recent years.

2. IntraLATA Calling

Many states have authorized IXCs and others to offer intraLATA calling services in competition with local telephone companies.⁵²⁵ Once intraLATA competition was authorized, questions frequently arose concerning dialing arrangements. Even in states where intraLATA competition exists, an intraLATA call dialed in the "normal" way (e.g., by dialing a seven-digit number, an eight-digit 1-xxx-xxxx number, or an eleven-digit 1-xxx-xxx-xxxx number) will be carried by the local telephone company. To use an alternative carrier, the caller must dial that carrier's access code.⁵²⁶ Some states, such as New York, have ordered local telephone companies to implement "intraLATA presubscription," under which the customer would be able to pre-select a specific carrier as the default carrier of the customer's intraLATA toll calls.⁵²⁷

3. Carrier Access Services

As noted above, local telephone companies provide connections between calling or called parties and the "points of presence" of long-distance carriers. Such service is known as "exchange access" in the MFJ, and is more commonly referred to as (switched) carrier access service. Companies known as "CAPs," or competitive access providers, have begun to offer competitive alternatives to RBOC-provided carrier access. For example, CAPs such as Teleport and MFS offer "local transport" service, providing alternative connections between a local telephone company's switching office and an IXC's point of presence. The offering of such services by CAPs has been facilitated by "collocation" regulations which require local telephone companies to allow CAPs to locate facilities in ("physical" collocation) or near ("virtual" collocation) the telephone company switching office, thus avoiding the transport charge that would otherwise apply for the carriage of calls between the switching office and the CAP facilities.

524. New York is one of the leading states in the nation in this regard.

525. To provide a sense of the size of an "intraLATA calling" area, New York City, Long Island, and much of Westchester comprise a single LATA. Some states comprise a single LATA; California, on the other hand, contains eleven LATAs.

526. AT&T's, for example, is 10288.

527. *See, e.g.*, Opinion and Order Concerning Intra-LATA Presubscription, Case 28425, Opinion No. 94-11 (N.Y. Pub. Serv. Comm'n Apr. 4, 1994) (stating that customers should be able to presubscribe to carriers for their intraLATA toll calls); Opinion and Order Concerning Intra-LATA Presubscription, Case 28425, Opinion No. 93-12 (N.Y. Pub. Serv. Comm'n July 13, 1993) (same).

4. Local Exchange Services

The New York Public Service Commission, and regulatory agencies in other states, have recently authorized certified companies to provide competitive local exchange service—that is, the basic “dial tone,” or connection between the customer and a local switching office. Local exchange competitors generally offer a range of local and long-distance calling services together with the basic exchange access hookup.

5. Changes in the Traditional Model

Questions involving competitive entry into the local telephone market remain hotly debated. In general, competitors complain that regulators have not moved fast enough in removing claimed barriers to entry, while incumbent local companies argue that they should not remain bound by regulatory restraints that do not apply to new entrants, on the grounds that such differential regulation creates a non-level competitive playing field. In any event, regulatory initiatives aimed at opening local markets to competition have also focused attention on the question of whether any changes are warranted in the way incumbent local exchange companies are regulated.

Some of the debate has focused on the continuing viability of the line-of-business restrictions of the MFJ. Competitors argue that these restrictions are necessary to prevent anticompetitive conduct by RBOCs; the RBOCs, on the other hand, argue that market conditions have changed so radically since divestiture that the restraints are no longer warranted, and that the remaining restraints impose severe competitive handicaps. For example, as a result of the interexchange restriction, RBOCs cannot offer “one-stop-shopping” for local and long distance services, as IXC now can; nor can they offer volume discounts on combined local and long distance usage. A number of RBOCs have petitioned the court that entered the MFJ (the United States District Court for the District of the District of Columbia, Judge Harold Greene) for relief from various line of business restrictions.⁵²⁸

Another focus of attention has been restraints on telephone company provision of video services. Although telephone companies do provide services for the *transport* of video programming generated by others, unlike cable companies, they are not allowed to participate in the origination or selection of such programming in their telephone

528. See, e.g., Memorandum in Support of Request of NYNEX Corp. for a Waiver to Provide Interexchange Servs. in New York, *United States v. Western Elec. Co.*, Civ. No. 82-0192 (D.D.C. Aug. 25, 1994) (seeking a waiver of MFJ restrictions in the state of New York).

service areas. This is partly a consequence of the Cable Communications Policy Act of 1984.⁵²⁹ Section 533(b)(1) of that Act states that:

It shall be unlawful for any common carrier, subject in whole or in part to subchapter II of [the Cable Communications Act of 1934] to provide *video programming* directly to subscribers *in its telephone service area, either directly or indirectly through an affiliate* owned by, operated by, controlled by, or under common control with the common carrier.⁵³⁰

Courts in a number of pending lawsuits have ruled that the video programming prohibition is an unconstitutional restraint on freedom of speech.⁵³¹

Finally, state regulators are beginning to review the desirability of continuing traditional "rate of return" regulation of local telephone company-provided services, and are considering whether to implement alternative "price cap," "incentive regulation," and "performance regulation" plans that may give such companies greater market flexibility.

II. ACCOMODATING UNIVERSAL SERVICE CONCERNS

An important and unresolved issue remains the impact of competition on the traditional goal of universal service. Naturally, competitors will first seek to enter markets where prices significantly exceed costs; generally speaking, these are the markets for the provision of long- and medium-distance calling services to business, and the provision of carrier access service to IXCs. As noted above, however, the "contribution" generated by those services helps keep the prices of a number of other services at relatively low levels; this, in turn, is thought to advance the goal of universal service. As competition begins to erode the revenues that those services generate, the question arises whether rates for basic residence access service can be maintained at their traditionally low levels.

Several solutions are being explored in different states. Some states, such as California, have allowed incumbent telephone companies to lower their rates for the contributory services to levels that

529. 47 U.S.C. §§ 521-559 (1988 & Supp. V 1993).

530. *Id.* § 533(b)(1) (emphasis added). The FCC has construed the term "common carrier," as used in this provision, to refer to traditional "dominant" local exchange companies, but not, for example, to IXCs.

A related cross-ownership restriction makes it unlawful for a common carrier "to provide channels of communications . . . to any entity which is directly or indirectly owned by, operated by, controlled by, or under common control with such common carrier, if such facilities or arrangements are to be used for, or in connection with, the provision of video programming directly to subscribers in the telephone service area of the common carrier." *Id.* § 533(b)(2); 47 C.F.R. § 63.54(b) (1994).

531. *See, e.g.,* *US West, Inc. v. United States*, 48 F.3d 1092, 1106 (9th Cir. 1994) (holding that under First Amendment scrutiny, § 533(b) fails the narrowly tailored requirement), *petition for cert. filed*, 64 U.S.L.W. 3160 (U.S. Aug. 23, 1995).

better reflect competitive realities, and to raise the rates for basic exchange access service.⁵³² The premise of these regulatory changes is that universal service will not seriously be compromised by modest increases in local exchange access rates. Other states are experimenting with alternative regulation plans in which telephone companies agree to maintain basic service rates at their current levels in exchange for an increased degree of regulatory flexibility.⁵³³ Some jurisdictions are considering special "high cost fund" arrangements in which telephone companies operating in high-cost areas could become eligible for subsidies from other carriers.⁵³⁴ Finally, some states are considering the establishment of "universal service funds," to which all providers of intrastate telecommunications services would be required to contribute, and that would be used to support low rates for certain services.⁵³⁵ Which of these measures will prove best suited to conditions in particular areas remains uncertain.

As long as universal service remains a goal of telecommunications regulators, a variety of thorny issues will have to be resolved. Many of these are currently under consideration in a pending proceeding before the New York State Public Service Commission.⁵³⁶ These issues also received detailed consideration from the Senate and House in connection with comprehensive telecommunications legislation that was considered, but not enacted, by the 103d Congress, as well as in connection with legislation being considered by the current Congress.⁵³⁷

As noted above, the key threshold issue is to identify the specific services that warrant universal service-type safeguards. Among the criteria that may be relevant to such a determination are the *necessity* of the service (e.g., emergency 911 service probably has a greater claim to universal service protections than Call Waiting), and whether normal market mechanisms (combined with available social service mechanisms) are sufficient to ensure the continuing availability of the service in question. Presumably, both criteria would have to be met

532. See *Alternative Regulatory Frameworks for Local Exchange Carriers*, No. 94-09-065, 1994 Cal. PUC LEXIS 681, at *55-59 (Cal. Pub. Util. Comm'n Sept. 15, 1994).

533. One such plan is the "Performance Regulation Plan," recently approved for New York Telephone Company. See *Opinion and Order Concerning Performance Regulatory Plan*, Case 92-C-0665, Opinion No. 95-13 (N.Y. Pub. Serv. Comm'n Aug. 16, 1995).

534. The New York Public Service Commission has been considering such an option. See *Proceeding on Motion of the Commission to Examine Issues Related to the Continuing Provision of Universal Service and to Develop a Regulatory Framework for the Transition to Competition in the Local Exchange Market*, Case 94-C-0095 (N.Y. Pub. Serv. Comm'n Feb. 10, 1994) [hereinafter *Transition to Competition Proceeding*].

535. See *id.*

536. *Id.* at 8.

537. H.R. 1555, 104th Cong., 1st Sess. (1995); S. 652, 104th Cong., 1st Sess. (1995).

before a service could be considered truly "basic" for universal service purposes.⁵³⁸ The cost of providing the service may also be relevant.

It should also be kept in mind that the list of "protected" services may well change over time, either through changes in the level of "necessity" of particular services or else through the creation or correction of market failures. For example, market forces may drive the price of basic voice grade telephone service to a level where regulation could not conceivably be viewed as necessary to preserve its universal availability. In such a case, the "market failure" test would not be met for that service. Conversely, the systems society uses for the delivery of education and medical care may conceivably change so radically in the future that certain broadband services would come to be considered as necessities. If this occurs, and if the market failure criterion is met, such services could be considered for inclusion in the universal service package.

Once a list of "protected" services is identified, the next question is how to ensure that those services are physically available in all parts of the country. In general, of course, the market will make services available wherever cost and demand ensure that they can be provided at a profit. The question remains of how *unprofitable* areas will be provided with such services, if they are deemed necessary.

Historically, incumbent local exchange carriers have been expected to make basic services available to all customers within their defined service territories, whether or not it would be economically attractive to do so at current rates. This role is sometimes referred to as the "carrier of last resort." As the provision of local telephone service becomes increasingly competitive, questions arise as to whether there should be more than one "carrier of last resort" in any particular area, how such carriers should be chosen, and whether and how they should be compensated for filling the "carrier of last resort" role.

The pricing of "protected" services remains perhaps the most difficult issue. As noted above, historically, regulators have sought to maintain basic residence local exchange access rates at low levels for all customers. Many have questioned whether that approach should be continued, or whether the general rate level should be raised, with low-income customers protected either through direct subsidy payments, vouchers, or special "Lifeline" discounted service offerings.

To the extent that low prices are deemed desirable for certain services, the question arises as to how those prices can be maintained.

538. For example, food is clearly necessary, yet food distribution is not subject to any special "universal service" regulatory framework; presumably, this is because market mechanisms, combined with such special assistance programs as food stamps, are deemed adequate to ensure the universal availability of adequate nutrition. On the other hand, to whatever extent the market has or has not achieved 100% market penetration of videocassette recorders, it would be hard to view that product as a "necessary" one.

Requiring the prices of other services to be maintained at artificially high levels creates economic inefficiencies, and tax funding may in many cases be politically infeasible. A middle alternative that has been considered is the creation of universal service funds supported by providers of telecommunications services.⁵³⁹ If such a fund is to be created, further questions arise as to what level of funding would be appropriate, how the funding obligation would be allocated among the entities supporting the fund, and how the fund would be allocated to beneficiaries.

CONCLUSION

These are difficult issues, but regulatory bodies and market participants are beginning to give them more detailed consideration. Within the next year, a body of precedent should emerge which will provide useful guidance for the resolution of universal service issues in the context of the NII.

⁵³⁹ Even here, the question arises as to who should be required to contribute to such funds. To the extent that the funds are established and maintained by regulatory bodies, jurisdictional considerations may limit participants to regulated entities. The benefits of universal service, however, extend beyond such firms.