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Note on Deregulation and Social Obligations:
Universal Service, Access Pricing and Competitive Dynamics in U.S. Telecommunications

For industries going through regulatory reform, a question that cannot be ignored is—How will social obligations be addressed in a deregulated environment? The presence of social obligations is an established fact. Over time a regulatory compact emerges between the government and utilities that they regulate. Governments shelter incumbent firms from competition by rules that raise the costs for potential entrants. Utilities are often granted monopoly concessions over geographic service territories and a "guaranteed" return on their investment in the network infrastructure under rate-of-return regulation. Incumbent firms, in turn, have obligations. In addition to restrictions on the average prices that they can charge, firms face regulatory restrictions on their customer base. Among other obligations, firms have almost always faced a *duty to serve* that in practice has meant they must extend service to costly-to-serve customers at prices that do not reflect these costs.

The duty to serve, as interpreted by current courts and regulators, has two principal dimensions. First, incumbent utilities have an obligation to provide and extend service to individuals in the company's franchise territory. Second, and equally as important, utilities have restrictions on their ability to cancel service for existing customers. In the contractual relationship between utilities and their retail customers, public service obligations assume that utilities can, and should, bear a larger financial share of the costs of setting up and maintaining utility service than the retail customers should. In the case of service extension, the issue is one of spreading costs; in the case of service continuation, utilities are concerned about the risk of customer default on payments.[1] These obligations restrict utilities from using common tools of business management—targeting profitable customers and avoiding unprofitable ones.

Why have such costly obligations been imposed on utilities? One justification is philosophical—many believe that citizens of a modern society are entitled to, and cannot be fully productive without, access to basic utility services. In the 1874 *Messenger v. Pennsylvania Railroad Company* case, for example, a New Jersey court argued that railroads could not discriminate in pricing, because a railway franchise was a quasi-public trust to which equal access was required. Similar service

[1] Service obligations can also be divided into four duties according to current U.S. law: (1) the duty to provide serve on reasonable terms to all who request it; (2) the duty to provide safe and adequate service to all customers; (3) the duty to serve all members of the public on equal terms; and (4) the duty to charge "just and reasonable" prices for services. Margot Freemand Saunders and Nancy Brockway, *Access to Utility Service*, (Boston: National Consumer Law Center, 1996), pp. 28-29.

Professor Alexander Dyck and Research Associate Indra A. Reinbergs prepared this case. This case was developed from published sources. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

obligations were extended to telephone, natural gas, electric power, and water companies.[2] Others have raised objections to the concentration of power once one provider becomes in effect a monopoly. The ability to decide whom to serve, and at what prices, gives a provider political power in addition to the incentive to distort prices to maximize profits. For example, in the nineteenth century, the duty to serve was seized upon by U.S. courts to control railroads, which often signed preferential price agreements with large oil customers and weakened the competitive position of smaller, independent oil companies.

There are also economic rationales for universal service rooted in the concept of network externalities. The value of having a set of telephone lines depends upon how many other customers are connected to the network. When a new customer is connected to a telephone network, not only does that customer benefit, but all existing customers also benefit, by the ability to call this new customer. This benefit to all other customers is external to the decision of the new customer to subscribe to telephone service–a network externality. A growing network will attract more customers in signing up, but if utilities were to price access to telephone service at free market rates, regulators believe the number of subscribers able to afford the service would be limited. Without some subsidies, new customers may only consider their personal benefit in deciding whether to pay for service extension to their homes—an economically inefficient decision.

Whatever the motivation, the important managerial question is—Can deregulation and the unleashing of competitive forces be combined with continued social obligations such as a duty to serve? There clearly is the possibility that increased product market competition will lead incumbents to drop costly-to-serve customers and to adjust their pricing to reflect commercial rather than social factors. At the same time, groups that have benefited from such programs are quick to raise concerns about such deregulation, and their opposition can slow and even stop regulatory reforms. The challenge of deregulation therefore is not only to redesign government influence over industry structure and conduct to enhance efficiency, but to do so in a manner that reduces opposition by interest groups that benefit from the current social obligations.

This note uses the experience of U.S. telecommunications to illustrate the existence and influence of social obligations. Recognizing these obligations enhances understanding of the dynamics of deregulation, both in the past and in the future. While there has been clear progress to introduce and pay for social obligations in a more competitively neutral manner, this is not the whole story. The note finishes with a discussion of recent issues in telecom deregulation and how social obligations continue to play a part in determining regulatory responses.

While the note focuses exclusively on telecommunications, the same points—that social obligations exist in regulated industries, and that finding a way to continue to address these obligations in a more competitive environment is a major element of regulatory reforms—could easily have been made in many other regulated industries. In U.S. railroad deregulation, the maintenance of often unprofitable short-lines to small communities became an important question. In U.S. banking deregulation, reform of the Glass-Steagall Act has greatly been hampered by concerns that repeal of this statute would undermine existing policies such as the Community Reinvestment Act. These policies require financial institutions to provide loans in the poorest communities in order to have the right to serve more affluent and profitable communities. The competitive challenges posed by social obligations experienced by U.S. investor-owned utilities have wider international significance. Duty to serve obligations are almost always included in

[2] The discussion of the duty to serve is based on Jim Rossi, "The Common Law 'Duty to Serve' and Protection of Consumers in an Age of Competitive Retail Public Utility Restructuring," *Vanderbilt Law Review* (October 1998), pp. 1233-1321.

privatizations of major state-owned utilities, and such obligations have played a large role in determining the possibility and profitability of entry into many markets.

Universal Service in the Telecommunications Industry

Public service obligations in telecommunications are known as universal service obligations. According to **Exhibit 1(A),** the evolution of universal service policy in a country can be correlated with five distinct stages of network development. **Exhibit 1(B)** illustrates the disparity between countries in telecommunications infrastructure. In 1996, for example, only 25 countries had more than 50 telephone lines per 100 inhabitants, whereas 43 countries had less than one telephone line. Because of these disparities, many developing countries have chosen *universal access* ("a telephone should be within a reasonable distance for everyone") instead of *universal service* ("a phone in every home") as their public policy goal. A country usually switches to universal service as the policy goal at a $12,500 per capita gross domestic product and a 70% household telephone penetration rate.[3] Universal service obligations have traditionally been applied just to basic, local telephone service.

In the United States, three components have been attributed to universal service—nationwide availability, non-discriminatory access, and widespread affordability.[4] Access and affordability are especially an issue for telecommunications providers using the local network. About half of local costs are "fixed" plant costs in that they vary with the number of subscribers, not with the amount or type of calls. Plant costs include local loop costs (copper wire circuit from the subscriber's home to the phone company's local office), customer premises equipment (the telephone), and wiring inside the house.[5] Various methods of identifying and allocating these "fixed" local infrastructure costs, combined with the regulatory insistence on inexpensive local telephone service, have often produced a need for cross-subsidizing rates priced at below cost. The financing of these universal service obligations mainly from long-distance providers has proven most controversial as the industry has deregulated.

Regulatory policies of achieving universal access have affected utilities' competitive strategies and success. **Exhibit 2** provides a preview of three distinct stages in public policy approaches to regulation that are to follow: the first two stages signify the broadening of the influence of universal service obligations, while the latter stage signifies their erosion and rationalization. In the first stage, promoting universal access is pursued within the constraints of board-to-board pricing. The universal policy goals produce price distortions, but these are limited. In a second stage, station-to-station pricing, universal policy goals are extended, as are price distortions. The onset of competition and deregulation in the third stage has led to the rationalization and reduction of some of these cross-subsidies through the introduction of access charges. However, examining the dynamics of regulatory change reveals how these obligations continued to have a significant bearing on competitive dynamics.

The 1996 Telecommunication Act signaled an intention to move to a fourth stage where such universal service obligations would continue, but they would no longer be administered in a way that affected competitive dynamics. That is, policy makers announced a goal of competitive neutrality, where rates were to move closer to prices, and universal service costs were to be financed from an explicit fund. Recent events suggest that the goal of competitive neutrality remains a long

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[3] International Telecommunications Union, *World Telecommunications Development Report 1998: Universal Access,* March 1998, Executive Summary, 1995 figures.

[4] Ibid.

[5] Congressional Budget Office, *The Changing Telephone Industry: Access Charges, Universal Service, and Local Rates*, June 1984, pp. 1-6.

way off. Long distance carriers still complain about access charges, and local carriers still use their duty to serve as a rationalization for remaining restrictions on entry in local markets.

Model No. 1: Board-to-Board Pricing

At the turn of the twentieth century, public utility commissions began using their new regulatory powers to encourage universal service. In 1907, state commissions began regulating local telephone service, and in 1910 "just and reasonable" rate requirements were extended to the telephone industry. The Communications Act of 1934 came close to defining universal service as a national policy, promoting "a rapid, efficient, nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges."[6] The 1934 Act also added the Federal Communications Commission (FCC) as the sole regulator of interstate service. The delineation between interstate and local jurisdictions was to play an important role in cost allocation.

To provide universal service, regulators introduced the principles of value-of-service pricing (charging more to business than residential users) and rate averaging (rate uniformity across a certain geographical territory). The extent to which these principles led to prices diverging from costs was limited however by the policy in place at the time of *board-to-board pricing*. Long-distance telephone rates were based only on the costs incurred between the switchboards used for toll connections. Regulators believed that the large fixed costs associated with providing local exchange services should be recovered exclusively by the local exchange. Thus, for the purpose of rate averaging there were pressures to limit price differences within a local exchange area, but no effective mechanism to average rates from board to board. This was just the beginning a trend of implicit cross-subsidies.[7]

These universal service pricing principles of value-of-service and rate averaging did not have a significant impact on competition within the telecommunication industry at this point in time. American Telephone & Telegraph (AT&T) intentionally adopted a corporate strategy agreeable to regulators and antitrust authorities: "One system, one policy, universal service." AT&T was allowed to proceed with its policy of growth through acquisition, buying up competitors and extending its dominance so that by 1930, not only did AT&T have a virtual monopoly over long distance service, it also had a local market share of 79%. AT&T's willingness to embrace the concept of universal service made it much easier for regulatory authorities to allow this concentration of economic power.

Model No. 2: Station-to-Station Pricing

While board-to-board pricing did cause prices to diverge from costs, it was only with station-to station pricing that there was a significant breakdown of the relationship between prices and costs. Rising local exchange costs, which deterred the ability to extend service, caused the U.S. Supreme Court to cast doubt upon the board-to-board pricing model in a 1930 court case.[8] Acknowledging the fact that long-distance calls were placed using local facilities, the principle of *station-to-station pricing* now calculated long-distance calls from one customer's phone (station) to the next phone, instead of from switchboard to switchboard.

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[6] Edwin A. Rosenberg and John D. Wilhelm, National Regulatory Research Institute, *State Universal Service Funding and Policy: An Overview and Survey* (NRRI 98-20), September 1998, p.1.

[7] The discussion of the first three pricing models is based on Richard Vietor, *Contrived Competition,* (Cambridge, MA: Belknap Press, 1994), pp. 167-232 and Samuel Passow and Michael D. Watkins, "Dial Tone: Competition Policy in the Telecommunications Industry," John F. Kennedy School of Government, unpublished 1997 draft.

[8] Vietor, *Contrived Competition,* p. 180. The 1930 U.S. Supreme Court case was *Smith v. Illinois Bell*.

With station-to-station pricing, a percentage of local subscriber plant costs were now allocated to interstate rates through a *subscriber plant factor*. While there was an economic rationale for including the subscriber plant factor in local rates, once this factor came under the control of regulators, its magnitude came to be dominated by political rather than economic factors.[9] Increasingly, local calls were subsidized by higher charges on long-distance calls. At the same time, the geographic rate averaging that state commissions had been using was extended by the FCC to interstate rates, despite AT&T protests. By 1952 the FCC's policy of "equal charges for equal services" had virtually achieved nationwide average pricing.

In ordinary businesses, such pricing distortions, and the growing lack of connection between costs and prices, would have led to significant entry in markets where prices are set above costs, reducing the market share of incumbents and saddling incumbents with costly-to-serve customers. The telecommunications industry was different. Regulators could easily implement their policy goals through AT&T's monopoly structure. Under the "separations and settlements" methodology, local operating companies separated their costs into interstate and intrastate categories. Then local companies and AT&T Long Lines (its long-distance arm) would regularly "settle up" a nationwide pool of interstate toll revenues in an internal bookkeeping transfer. As long as lower-than-cost rates for one segment were balanced by higher-than-cost rates for another segment, AT&T was practically indifferent to this political manipulation of pricing policies.

The introduction of competitive forces, stimulated by technological change, began to shake the status quo. The post-World War II boom in defense-related technology dramatically lowered the costs of long-distance transmission and switching, luring entrepreneurs into the industry. The most significant challenge to cross-subsidies occurred by Microwave Communications, Inc. (MCI) in the new market for private microwave long-distance services. MCI initially focused on business customers, who faced the highest price distortions from costs due to the principle of value-of-service pricing. Despite the FCC's fight against MCI in two court cases, an appeals court eventually ordered the mandatory interconnection of local facilities, ending AT&T's long-distance monopoly.

The introduction of new entrants posed a regulatory problem. Bell operating companies and state regulators wanted MCI and other entrants into the long-distance market to continue to subsidize local service so that rate averaging could be maintained. That is, they wanted such entrants to face a subscriber plant factor as high as that facing AT&T Long Lines. MCI complained that competition would not be possible with such high subsidies. The compromise reached in 1978 was the Exchange Facilities for Interstate Access Tariff, whereby entrants would initially pay 65% fewer subsidies than AT&T, decreasing to 45% less, as their combined revenues increased.[10] Thus, the presence of universal service obligations, and the rule for allocating them across competitors, became an important source of competitive advantage for entrants such as MCI and a burden to AT&T.

Despite strong lobbying to remove these subsidies and to equalize the burdens across competitors, up through the 1980s the percentage of local subscriber plant costs actually increased, and there remained a gap between AT&T and its competitors. As **Exhibit 3** illustrates, even in 1981, the percentage remained sizable at 26% with variance across states from 13% to 42.6%.

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[9] Suggestive of the underlying economics, recent estimates show that every 1% of long-distance traffic generates a corresponding 3.3% of local network costs (Jerry Hausman and Howard Schelanski, "Economic Welfare and Telecommunications Regulation: The E-Rate Policy for Universal-Service Subsidies," *Yale Journal on Regulation* (Winter 1999), p. 23.).

[10] Vietor, *Contrived Competition*, p. 201.

The real impetus to change the system was the ruling that produced the 1984 break up of AT&T's local monopoly.[11] This ruling required access to local networks to be non-discriminatory and fairly priced.[12] The FCC was set with the task of designing a new pricing mechanism that could accommodate all new entrants into long distance.

Model No. 3: Access Charges

To fund its universal service goals in the new competitive environment, the FCC developed a system of interstate access charges. Long-distance carriers would pay local exchange carriers (LEC) access charges on both the originating and terminating ends of the call, which would cover the LEC cost of carrying interstate calls "the last mile" over the local voice switched network. The long-distance carriers would recover these costs through a per-minute subscriber line charge from consumers. The first Access Charge Plan, proposed in 1982, tried to restore competitive neutrality and market-based pricing, as well as prevent large customers from bypassing the public network. A minimum flat rate to consumers would be gradually raised, while per-minute access charges paid by long-distance carriers would be simultaneously phased out by 1990, when the carriers would only pay the traffic-sensitive costs of the connection. Finally, a portion of long-distance revenues would be used to establish a Universal Service Fund to subsidize local exchanges with high fixed costs.[13]

The initial FCC plan was not introduced. State regulators criticized the 1982 FCC plan as a threat to universal service, and AT&T's competitors did not want to lose their 35% discount, which the plan would phase out over 30 months. AT&T, however, was a strong proponent of access fees after its 1984 dismantling.[14] The FCC compromise plan, implemented in June 1985, retained subscriber line charges, but capped them at a flat rate. Long-distance carriers still complained that they were required to pay an inordinate proportion of local costs. The access discount to AT&T's competitors was restored to the previous level of 55%, and the Universal Service Fund was retained, although contributions began later than planned, in 1986.

To promote universal service, the FCC developed a two-pronged approach. On the supply-side, LECs serving rural and high-cost areas could qualify for financial support from programs funded by long-distance carriers and LECs serving low-cost areas (such as the Universal Service Fund).[15] On the demand-side, beginning in 1984 low-income subscribers received direct assistance through Lifeline programs (administered through the local-exchange carrier) for the initial connection charge and a discount on the monthly fee. Long-distance carriers also funded the demand-side programs. (See **Exhibit 4** for 1998 data).

By the 1990s, regulators and long-distance carriers were pushing for full deregulation of the local telephone market. Long-distance carriers such as AT&T argued for eliminating the "hidden"

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[11] In 1974, the Department of Justice launched an antitrust suit against AT&T that culminated in the January 1, 1984 divestiture of AT&T's 22 Bell Operating Companies. They were restructured into seven holding companies (Regional Bell Operating Companies-RBOCs), and the United States was redrawn into 161 local monopolies. The RBOCs could not offer intrastate and interstate long-distance service and information services. RBOCs also had to provide equal access to all interstate carriers.

[12] Vietor, *Contrived Competition,* p. 214.

[13] Vietor, *Contrived Competition,* pp. 214-216.

[14] Andrew Kupfer, "The next big war in telecom," *Fortune*, November 23, 1998, pp. 260-262.

[15] James Prieger, "Universal Service and the Telecommunications Act of 1996: The Fact after the Act," *Telecommunications Policy* (February 1998), p. 59.

universal service subsidies in access charges, which prevented them from fairly competing in the local market. Half of the $20 billion that LECs collected annually in access charges was criticized as unnecessary for universal service financing. AT&T promised to share the "$10 billion dividend" with consumers as lower rates if access charges were eliminated. [16]

To prepare for competition, in 1991 the FCC replaced rate-of-return regulation with price-cap regulation for the Regional Bell Operating Companies (RBOCs), whereby the access charges that LECs could charge long-distance providers would gradually be reduced through a price cap system (an inflation-adjusted index minus a productivity "X factor" for the telephone industry). As **Exhibit 5** illustrates, the price cap succeeded in lowering the total access charges per minute from 17.26 cents in 1984 down to 3.71 cents in 1999, thus bringing the prices of long-distance service closer to cost. The Price Cap Order also allowed LECs to introduce "zone density pricing" (geographically de-averaged pricing) for special access services. Naturally, long distance companies argued for greater reductions in access prices (a higher productivity factor) whereas LECs wanted the opposite.

Model No. 4: The Universal Service Fund

With much fanfare, the 1996 Telecommunications Act promised a new industry structure. Universal service and competition were both declared national priorities. Long-distance companies such as AT&T and MCI could now enter the $90 billion local market, and the seven remaining RBOCs could offer long-distance services, once certain FCC conditions were met (including proving that local phone networks were open to entrants).[17] In May 1997, the FCC issued three companion orders, on price cap reform, access charge reform, and universal service, to move towards this new structure.

The Universal Service Order was the clearest national commitment to the principle of universal service since the 1934 Communications Act. The Universal Service Order guaranteed "reasonably comparable rates and services" (see **Exhibit 6**) everywhere, including remote rural areas, but left the financing up to the FCC and the states. Of significance was the expansion in the universal service mandate. Whereas universal service had previously just covered "plain old telephone service," it was now defined to include new types of services (emergency), new technologies (the Internet), and new institutional recipients (schools, libraries, and rural healthcare organizations). For instance, based on the Order, the FCC established an "e-rate" subsidy that would provide Internet access at a 20% to 90% discount for schools and libraries. The estimated additional cost of this subsidy was $2.25 billion annually.

To fund this expanded mandate, the obligation to pay into the USF was extended in 1998 from long-distance carriers to all new competitors in the long-distance market (LECs, wireless telephone companies, paging companies, and payphone providers). The USF contributions for the Internet e-rate, for example, would be assessed on interstate and intrastate revenues, while funding for the other USF programs (e.g., low-income) would be based solely on interstate revenues.[18] At the same time, the FCC wanted the increased demands on the USF to not affect the rates that carriers charged residential consumers. The FCC sought to do this by continuing the annual reductions in access charges, as well as by restructuring the system to make universal service subsidies more transparent. The hope was to eliminate the higher than cost per-minute charge that long-distance carriers currently paid with a flat Presubscribed Interexchange Carrier Charge, plus a lower per-minute

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[16] <http://www.att.com/publicpolicy/univserv.html>

[17] "Telecom Vote Signals Competitive Free-for-All," *Wall Street Journal*, February 2, 1996, p. B1.

[18] Mark P. Trinchero and Holly Rachel Smith, "Federal Preemption of State Universal Service Regulations Under the Telecommunications Act of 1996," *Federal Communications Law Journal* (March 1999), p. 327.

charge. As for the subscriber line charge, while the rate for a primary residential line was left unchanged at $3.50, the level at which it had been for the past decade, the FCC allowed LECs to raise subscriber line charges on non-primary residential lines. Internet Service Providers were specifically exempted from paying access charges and contributing to the USF.

The inherent conflict in the 1996 Telecommunications Act—full deregulation of telecommunications *and* a broad expansion of the (expensive) universal service mandate—has left the implementation of the 1996 Act and 1997 reforms hampered by political opposition in Congress and court challenges by long-distance carriers and LECs. The controversial $2.25 billion e-rate (sometimes called the "Gore tax") has especially drawn fire, as many have argued that the FCC had no jurisdiction to introduce the Internet discount in the first place.

A Preliminary Evaluation

Has the 1996 Telecommunications Act succeeded in its goal of funding social obligations in a way that is now competitively neutral? That is, do the presence of these obligations no longer affect competitive dynamics? Examining four recent conflicts—on mergers, access charge reform, wireless and new technology—sheds some light on these questions. As described below, although both long-distance and local markets are supposed to become fully competitive, in fact universal service obligations continue to affect business dynamics. There is continued interest on the part of regulators to ensure that consumers have access to what are perceived as necessary services and to protect them from unduly high or discriminatory prices. The complex number of players and technologies (such as the Internet) in a deregulated industry complicate the ability of regulators to carry out their intentions. Just as regulators failed to anticipate the threat that new entrants in long-distance (MCI) would bring to the separations-and-settlements system, similarly the ability of Internet services to bypass access charges threatens the existing universal service system.

Example 1: Consolidation: Mergers

The 1996 Act eliminated the merger restrictions on the RBOCs dating from the 1982 consent decree that dismantled the AT&T monopoly. To defend themselves against first-time entrants into their local territories and prepare themselves for entry into long-distance, the RBOCs have responded by merging with each other, as well by as eyeing long-distance rivals.

A commitment by telecommunications carriers to maintain universal service obligations has generally been a condition for merger approval by federal and state regulators. In this sense, the obligations have been a constraint, but they can also be viewed as a source of favorable publicity. For example, when SBC Communications Inc., one of the more aggressive RBOCs, took over Pacific Telesis Group (Pacific Bell) in 1997, approval by the California Public Utilities Commission required sharing the benefits of the merger with customers. In response, Pacific Bell introduced a 10-year, $50 million Community Technology Fund for low-income areas and a Universal Service Task Force to reach 98% of California households.[19] The FCC approval of the SBC-Ameritech merger imposed a list of 30 conditions, including the requirement that the new company offer 10% of its fast Internet connections in rural/low-income areas and expand Lifeline programs.[20] The impact on universal

[19] Shirley Leung, "Pacific Bell Plans to Fund Initiative To Broaden Reach of Phone Service," *Wall Street Journal*, November 18, 1998, p. CA4; "Senior Organizations Cite Benefits for California in Telecommunications Merger," *Business Wire*, July 12, 1999.

[20] Federal Communications Commission, "FCC Approves SBC-Ameritech Merger Subject to Competition-Enhancing Conditions," October 6, 1999.

service has also been cited by the FCC as a key factor in approval of the potential merger between AT&T and the cable provider MediaOne.[21]

Example 2: Access Charge Reform: Long distance vs. LEC reactions

The reaction of long-distance providers and LECs to access charge reform since the 1996 Act has generally been predictable. Long-distance providers push for lower access charges, to bring them closer to the cost of interconnection, arguing that the cost to LECs of providing interconnection has fallen more rapidly than is reflected in access fees. In 1998, when the e-rate program and Presubscribed Interexchange Carrier Charge were introduced, long-distance carriers such as AT&T and MCI responded by introducing a flat "federal universal service fee" of 4.9% on long-distance service to business customers.[22] A year later, when the e-rate program was expanded by almost $1 billion, long-distance companies raised the "universal service fee" even higher, despite the simultaneous $825 million reduction in access charges.[23] Long-distance companies also began charging "low-use," presubscribed residential customers flat fees even when they made no long-distance calls. Whereas overall long-distance rates have decreased, per-minute charges for low volume users have risen from 17 cents in 1991 to 19 cents in 1999, triggering a possible re-regulation of the long-distance market by the FCC.[24]

Naturally, the LECs do what they can to protect their revenue stream and local monopoly. They have tried to make up the shortfall from access charge reform with slightly higher local rates, charging as much as 100 times cost for additional services like caller ID, and have pushed to get access charges designated as "necessary" for universal service.[25] At the same time, LECs criticize the FCC for not promoting local competition. SBC Communications challenged the FCC in court, saying that competitors could unfairly offer unbundled service to avoid access charges. Consumers, labor unions and LECs criticized the “cherry-picking” (targeting only profitable business customers) of the local market by long-distance companies as a direct threat to universal service. Despite these concerns for consumers, Bell Atlantic raised its own "federal access charge" on local residential service by nearly 100% in 1999 to recover a shortfall of $230 million from lower access charges.[26]

In late 1999 a possible solution to the access charge conflict was seriously being investigated by the FCC for adoption in 2000. The Coalition for Affordable Local and Long Distance Service (CALLS) brought together an unusual alliance between several RBOCs (Bell Atlantic, BellSouth, SBC Communications) and long-distance providers (AT&T, Sprint). The CALLS plan submitted to the FCC would eliminate presubscribed charges and reduce per-minute access charges from 1.2 cents to 0.55 cents for the Bells and 0.65 cents for other incumbent LECs (ILEC). At that point, the current LEC obligation to reduce price caps by the 6.5% "productivity factor" would end. In return, ILECs could raise the monthly subscriber line charge to residential consumers from $5.50 (including all flat charges) to $7.00 by 2003. Universal service subsidies for rural service would be drawn instead from a

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[21] *Warren’s Cable Regulation Monitor*, August 2, 1999.

[22] Catherine Yang, “The Hidden Tax in Your Phone Bill,” *Business Week*, May 4, 1998, p.46.

[23] "Big 3 to Boost Long-Distance Phone Charges," *Los Angeles Times*, July 2, 1999, p. C-1.

[24] Mark Wigfield, “Consumer Union Want Bells In Regulated Long-Distance,” *Dow Jones News Service*, June 9, 1999.

[25] Andrew Kupfer, "The next big war in telecom," *Fortune*, November 23, 1998, pp. 260-262.

[26] Shu Shin Luh, "Bell Atlantic to Raise Access Fee 51 Cents," *Washington Post*, June 30, 1999, p. E-1.

new $650 million Universal Service Fund. Finally, rate de-averaging by ILECs in urban and rural markets would be allowed for the first time. [27]

Example 3: New Entrants: Wireless Telecommunications

Wireless telecommunications providers have been especially vocal in their complaints about the universal service system. Wireless companies like Western Wireless Corp. are required to pay into federal and state universal service funds, but state public utility commissions have been reluctant to certify them as "eligible telecommunications carriers" (ETC) so they can receive funds back out. A court has ruled that states can require more for ETC certification than the FCC.[28] Without these subsidies, wireless companies say they cannot offer universal service and compete with ILECs in high-cost areas. As wireless service offers clear cost advantages over traditional wireline service of the ILECs, it is understandable that states are trying to help the local monopolies—wireless service costs 30% less to offer than wireline service in urban areas, and nearly 70% less in rural markets.[29] U.S. West, one of the ILECs that did not sign the CALLS agreement, asked the FCC instead to use the reductions in access charges (about $5.6 billion over 5 years) to create a "portable" Universal Service Fund that would help new entrants compete.[30]

Example 4: New Technology: The Internet

As indicated in the regulatory chronology in **Exhibit 7**, since the 1980s advanced services have been unregulated. This FCC policy was based on a distinction set up in the 1980 Computer II decision and the 1982 AT&T consent decree, between "basic" services (also called "common carrier communications" or "telecom services") and "enhanced" services ("information services"). Basic services were understood to be a natural monopoly that required FCC regulation to ensure universal service obligations, whereas unregulated growth was to be promoted in enhanced services. Internet Service Providers (ISP) were seen as providers of information and as customers, not competitors, of telecommunications carriers.[31]

However, in response to the unanticipated market of Internet telephony (offering inexpensive long-distance telephone service over the Internet), the FCC began to extend regulatory feelers, while staying with its distinction between telecommunications and information services. Despite LEC arguments that excessive Internet "surfing" wears down their local networks, the 1998 FCC Report on Universal Service to Congress clearly exempted ISPs from per-minute access charges. However, the Report did declare that the FCC could regulate phone-to-phone, but not computer-to-computer, Internet telephony. By 1999 the FCC had also assumed interstate jurisdiction over digital subscriber lines of incumbent LECs (although only 10% of their traffic was interstate) and over dial-up calls to ISPs.[32] As for the controversial e-rate, in late 1999 an appeals court upheld the FCC's authority to establish the discount program, ruling that it was not an unconstitutional tax. [33] There were

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[27] Alan Pearce, "Policy from the boardroom, " *America's Network*, September 15, 1999, p. 94.

[28] Heather Forsgren Weaver, "Court Decision Footnote Seen As Important For Wireless," *RCR Radio Communications Report,* August 9, 1999, p. 7.

[29] "Universal Service Funding Flap Flares On Capitol Hill," *Wireless Today*, September 10, 1999.

[30] Joan Engebretson, "The Devil That You Know: Opponents unite on access charge reform," *Telephony*, August 9, 1999.

[31] Jennifer Taylor, "Abscence of intervention, " *Telephony*, May 31, 1999, p. 48.

[32] James W. Olson and Gregory F. Intoccia, "A Thin Red Line," *Telephony*, June 7, 1999, pp. 254-260.

[33] "Court Upholds E-rate Discounts Despite Lack of Specific Authority," *Education Technology News*, August 18,1999.

simultaneous legislative efforts underway in Congress to finance the e-rate through a telephone excise tax, instead of through access charges.

Social Obligations and Competitive Dynamics

Universal service obligations in the United States began as a competitive strategy by AT&T to achieve regulatory support to build a national network and buy up competitors. It was then a defensive means for AT&T to maintain its national monopoly, which offered regulators a simple industry structure through which to achieve their public policy goals such as rate averaging. The system of unequal universal service contributions proved a liability to AT&T when new entrants such as MCI broke its long-distance monopoly. But change has been very slow. Regional Bell Operating Companies have realized that maintaining these obligations provides benefits as it can help to slow the introduction of competition and the reduction of high access rates. The specter that excessively quick deregulation will lead to the abandonment of public service obligations clearly resonates with the public and with regulators. Summing up, today the goal of competitively neutral social obligations remains a goal rather than reality. In that context, incumbents and entrants need to consider the scope of existing and prospective social obligations and how the presence and funding of these obligations will affect their competitive dynamics.

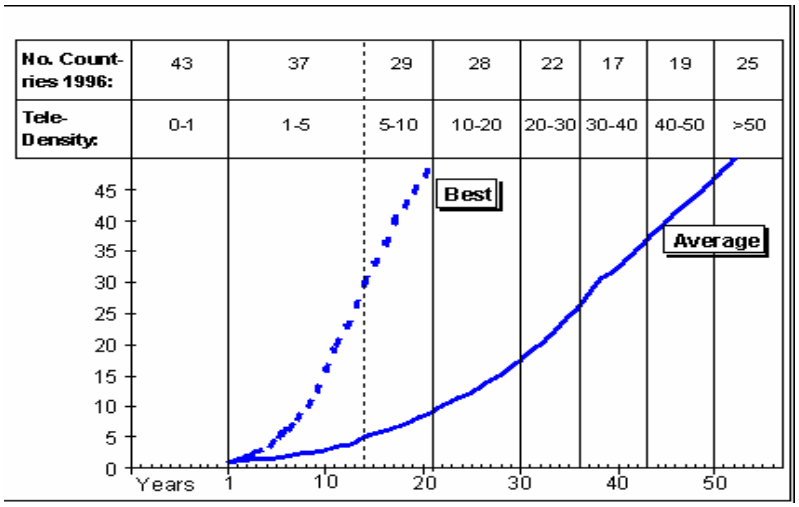
Exhibit 1(A) Five Stages of Universal Service Policy Development

	Stage 1: Network Establishment	Stage 2: Wide Geographic Reach	Stage 3: Mass Market Take-up	Stage 4: Network Completion	Stage 5: Service to Individuals
Teledensity*	0 to 5 per 100	1 to 20 per 100	15 to 40 per 100	35 to 60 per 100	over 50 per 100
Telephone company culture	Entrepreneurial	Administrative	Operational	Commercial	Competitive
Management preoccupation	Capital investment	Network improvements	Growing the network	Growing call revenues	Profitability
Constraints to network expansion	Funds, appropriate technology	Limited demand due to high prices	Waiting lists	Affordability of service	Market appeal
Public policy measures (telecom)	Investment incentives	Govt. control; geographically uniform charges	Installation and rental charges kept low	Cost-oriented tariffs	Free, fair competition
Universal service goal type	Technological (acquire new technology)	Geographic (maintain regional parity)	Economic (stimulate economy)	Social (political cohesion)	Libertarian (right to communicate)
Example of universal service goals	Long distance service linking all major centers	Telephone service available in cities	Widespread residential take-up of telephony	Telephone affordable to all	Public access to advanced services
Public policy measures (universal service)	License conditions on network rollout	Profitable licenses subject to unprofitable obligations	Control speed of price rebalancing	Targeted subsidies	Identify and meet non-market demand

Source: Claire Milne, "Stages of Universal Service Policy," *Telecommunications Policy*, October 1998 (modified by casewriter).

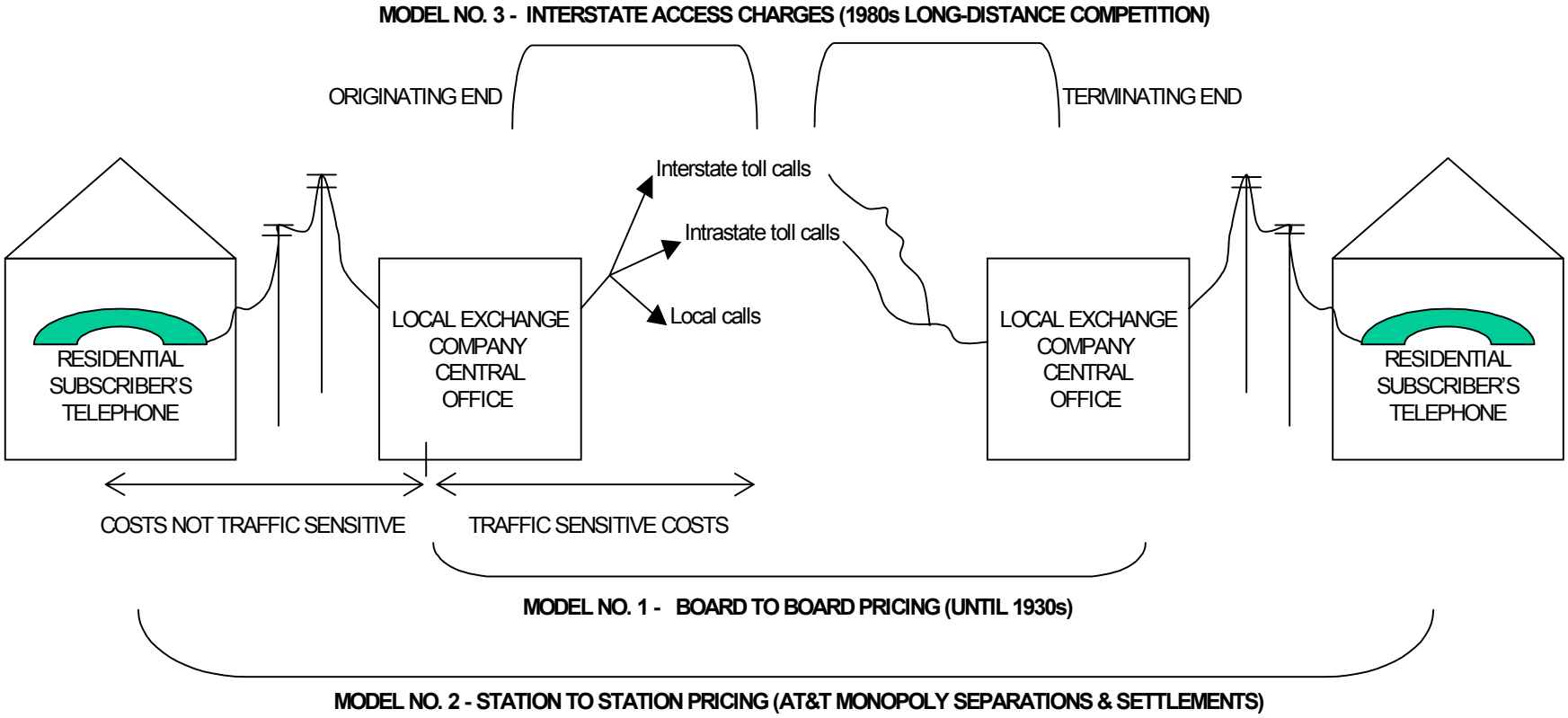
Note: *"Teledensity" refers to number of main telephone lines per 100 inhabitants.

Exhibit 1(B) Time to Attain Different Teledensities,* in Years



Source: International Telecommunications Union website, *World Telecommunications Development Report 1998*.

Exhibit 2 Financing Local Exchange Costs in U.S. Telecommunications Industry



Source: Richard Vietor, Contrived Competition (Cambridge, MA: Belknap Press, 1994), p. 180 (modified and supplemented by casewriter).

Exhibit 3 Sample Subscriber Plant Costs and Interstate Allocation in 1981

Local Bell Company	Subscriber Plant Costs	% Allocated to Interstate (Subscriber Plant Factor)	Amount Allocated to Interstate
Arizona	$ 28	42.6	$ 12
Kentucky	22	13.0	3
Massachusetts	23	27.5	6
New Mexico	27	36.0	10
System Average	**$ 26**	**26.0**	**$ 7**

Source: Congressional Budget Office, The Changing Telephone Industry: Access Charges, Universal Service, and Local Rates, June 1984.

Note: Subscriber plant costs include inside wiring and customer premises equipment. The monthly average fixed cost per subscriber ($26) is substantially more than the average monthly charge for residential service. Revenues to pay remaining fixed costs, as well as variable costs, are generated through a combination of interstate toll charges, intrastate toll charges, and charges for other services such as private lines or leased facilities.

Exhibit 4 High Cost and Low Income Universal Support Mechanisms for 1998

	Annual Payments (000s)	Annual Contribution (000s)	Monthly Payments Per Loop
High Cost Support Mechanisms	$1,550,704	$1,706,205	$0.75
Low Income Support Mechanisms	444,610	442,728	0.21
TOTAL SUPPORT	**$1,995,313**	**$2,148,933**	**$0.96**

Source: Federal Communications Commission

Notes:

"Loop" is defined by the FCC for universal service purposes as "a pair of wires, or its equivalent, between a customer's station and the central office from which the station is served."

This table does **not** include data on the new universal service mechanisms for schools, libraries, and rural health care providers.

High Cost Support Mechanisms consist of three programs:

(1) Local carriers with an average cost per loop that exceeds 115% of the national average can allocate an additional portion of their non-traffic sensitive costs to the interstate jurisdiction. Those costs are covered by the **Universal Service Fund**. (The national cost benchmark, which impacts the number of states in which carriers are eligible for high-cost support, was to be recalculated in 2000 by the FCC as part of universal service reform).

(2) **Long term support** is also related to non-traffic sensitive costs. The program allows members of the common line pool to charge a below-cost carrier common line rate that is uniform for all companies in the pool.

(3) **Local Switching Support** helps small local exchange carriers (with 50,000 or fewer access lines) to defray higher traffic-sensitive local switching costs.

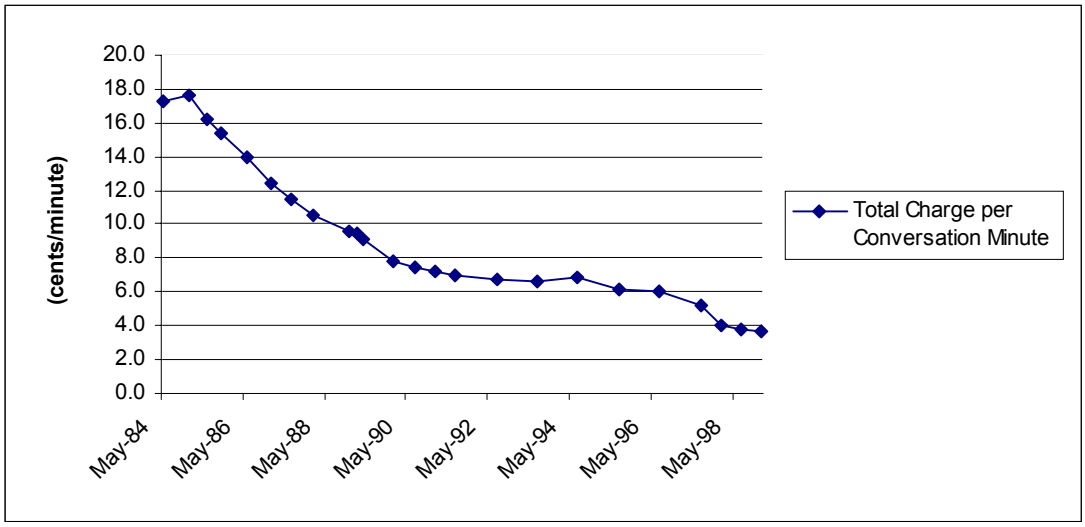
Low Income Support Mechanisms consist of four programs:
(1) Local exchange carriers providing **Lifeline** support may not disconnect a qualifying low-income consumer's local service for non-payment of toll charges.

(2) **Link Up America** offers eligible low-income consumers (a) a reduction in the local telephone company's charges for starting telephone service and (b) a deferred, interest-free payment plan for associated charges.

In 1998, two new low income support mechanisms (3) **incremental toll limitation** and (4) **presubscribed interexchange carrier charge (PICC) reimbursement** were created.

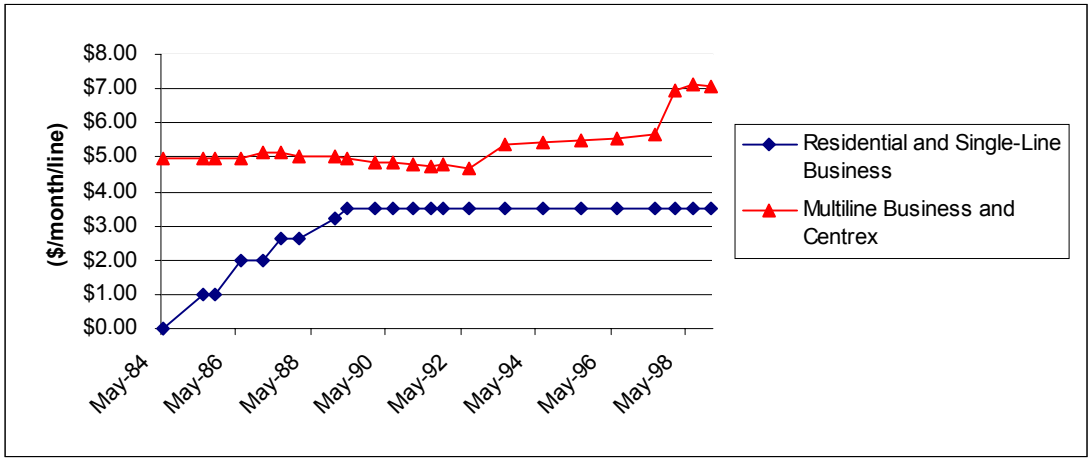
Exhibit 5 Interstate Access Charges (U.S. Average), 1984 – 1998

Per-Minute Access Charges



Note: The total charge per conversation minute consists of charges on the originating end of the call, which are adjusted for dialing and call setup time, plus charges on the terminating end.

Per-Line Access Charges



Note: Not shown here are the Presubscribed Interexchange Carrier Charges (PICC), which price-cap carriers began to charge long distance carriers in January 1998. Higher rates are charged for multi-line business and non-primary residential lines. While carriers do not charge different rates for Centrex and multiline business lines, they do charge different PICC rates for these lines.

Source: Federal Communications Commission, *Trends in Telephone Service*, February 1999.

Exhibit 6 FCC Order on Universal Service (excerpts)

III. PRINCIPLES

(1) **QUALITY AND RATES**. -- Quality services should be available at just, reasonable, and affordable rates.

(2) **ACCESS TO ADVANCED SERVICES**. -- Access to advanced telecommunications and information services* should be provided in all regions of the Nation.

(3) **ACCESS IN RURAL AND HIGH COST AREAS**. --Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.

(4) **EQUITABLE AND NONDISCRIMINATORY CONTRIBUTIONS**. -- All providers of telecommunications services should make an equitable and nondiscriminatory contribution to the preservation and advancement of universal service.

(5) **SPECIFIC AND PREDICTABLE SUPPORT MECHANISMS**. -- There should be specific, predictable and sufficient Federal and State mechanisms to preserve and advance universal service.

(6) **ACCESS TO ADVANCED TELECOMMUNICATIONS SERVICES FOR SCHOOLS, HEALTH CARE, AND LIBRARIES**. -- Elementary and secondary schools and classrooms, health care providers, and libraries should have access to advanced telecommunications services.

(7) **ADDITIONAL PRINCIPLES** ("**COMPETITIVE NEUTRALITY**") Competitive neutrality means that universal service support mechanisms and rules neither unfairly advantage nor disadvantage one provider over another, and neither unfairly favor nor disfavor one technology over another.

IV. DEFINITION OF UNIVERSAL SERVICE: WHAT SERVICES TO SUPPORT

- single-party service;
- voice grade access to the public switched network;
- dual tone multifrequency signaling or its functional equivalent;
- access to emergency services including, in some circumstances, access to 911 and Enhanced 911;
- access to operator services;
- access to interexchange service;
- access to directory assistance;
- and toll limitation services for qualifying low-income consumers.

Source: Federal Communications Commission, FCC 97-157, *Report and Order in the Matter of Federal-State Joint Board on Universal Service,* issued May 8, 1997.

*Note: "Information service" is defined by the 1996 Telecommunications Act as "the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing or making available information via telecommunications."

Exhibit 7 Chronology of Advanced Services Regulation by the FCC

Date	Ruling
1980	**Computer II decision**. Federal Communications Commission (FCC) distinguishes between basic (regulated) and enhanced (unregulated) service.
1982	**Consent decree breakup of AT&T.** Divestiture court differentiated between common carrier communications and information services.
February 1996	**Telecommunications Act of 1996 passes.** "Telecom services" and "information services" are defined in a manner similar to the earlier definitions in distinguishing between "basic" (common carrier communications) and "enhanced" (information) services.
April 1998	**Report on universal service.** FCC affirms that the distinction between the categories of telecom service and information service survived passage of the telecom act. Phone-to-phone but not computer -to-computer Internet telephony could be regulated.
August 1998	**FCC Office of Plans & Policy Cable Internet working paper.** Paper notes that because the Telecom Act regulates various services as distinct categories, it will become increasingly difficult to regulate Internet-based services that cross those categories. A new regulatory paradigm is recommended for Internet-based services.
August 1998	FCC clarifies that interconnection and unbundling apply to advanced services.
October 1998	FCC rules that a GTE Digital Subscriber Line (DSL) service is interstate.
November 1998	FCC rules that the DSL services of Bell Atlantic, BellSouth, and Pacific Bell are interstate.
January 1999	FCC concludes notice of inquiry on advanced services and finds that broadband backbone facilities are being deployed in a reasonable and timely manner. It also pledges "to closely monitor" such deployment.
February 1999	FCC rules that dial-up calls to Internet Service Providers (ISP) for Internet access are interstate.
March 1999	FCC adopts certain spectrum compatibility rules—indicating that loop technology that complies with existing industry standards has been successfully deployed without significantly degrading other services, or has been approved by regulatory or industry standard bodies—is presumed acceptable for deployment. Also adopts stringent rules for assisting competitors that seek to co-locate equipment in LEC central offices.

Source: James W. Olson and Gregory F. Intoccia, "A Thin Red Line," *Telephony*, June 7, 1999, p.256.