VIII.

Conclusion

Our comprehensive study of the technical and economic conditions of the local telephone service market today, and the prospects for increased competition in the future, reinforce the critical role policymakers will play in nurturing local exchange competition. The proper sequencing of policy implementation is critical. As long as the BOCs retain control of *any* significant essential element of the overall service, they possess the ability to extend that monopoly to prevent competition from developing fully. *We conclude that, for at least the next five to ten years, and perhaps even longer, sustained LEC dominance and control of essential local exchange bottleneck facilities will persist, even in the face of extensive efforts by public policymakers to remove technical, legal and regulatory barriers to entry.*

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1 ASSURING COMPETITION IN ADJACENT MARKETS: CONSTRAINING BOC MARKET POWER

U.S. telecommunications policy is increasingly being driven, at both the state and federal levels, by the goal of establishing viable and efficient competitive markets. While competition in the long distance and telecommunications equipment markets has flourished in recent years, local exchange services remain essentially monopolistic. Policymakers are attempting to assess the extent of this monopoly, and prescribe rules and regulations that will foster additional competition where practical and efficient. This study supports that effort by providing a comprehensive technical, economic and policy examination of both the current state of local exchange competition and the potential for increased competition over the next five to ten years. The study concludes that competition for local telephone service may be both viable and sustainable in the future under certain favorable market and regulatory conditions, but that the proper sequencing of policy implementation is critical to this outcome.

In contrast, the Regional Bell Holding Companies (RBHCs or RBOCs) argue that they face robust competition in many of their markets today, and that competition in remaining markets is imminent. If this were true, then revision of the existing *MFJ* may well be appropriate, although not necessarily in the precise direction being sought by the RBHCs. But the factual basis for the RBHCs' position is not true, and the regulatory and structural changes being sought by the RBHCs will have precisely the opposite effect: They will frustrate competitive entry into the local telephone market, and will harm existing competition in the long distance and equipment manufacturing markets.

1.1 BOCs maintain overwhelming dominance of the local telecommunications market

Expansion of alternative access provider services, FCC-mandated interconnection and co-location requirements, the growing use of wireless services, even multibillion dollar alliances between traditional telecommunications carriers and potential future alternative local service providers, have all contributed to a *perception* that local competition has arrived. While these developments may have increased the prospects for competition, their actual *economic impact* on the traditional local exchange monopolies is, at the present time, far more smoke than fire. Furthermore, the enormous investments required to build

alternative local networks across the country, the time it will take to win customers, and the power of the incumbent local exchange carriers to thwart competitive entry ensure that effective competition will not occur overnight.

- Aggregate revenues, which are paid by long distance carriers and end users, for access services of all Competitive Access Providers (CAPS) combined are *less than one percent* of total monopoly local exchange carrier access revenues, and an even smaller percentage of total revenues. (See Figures 1.1 and 1.2 below.)[1]

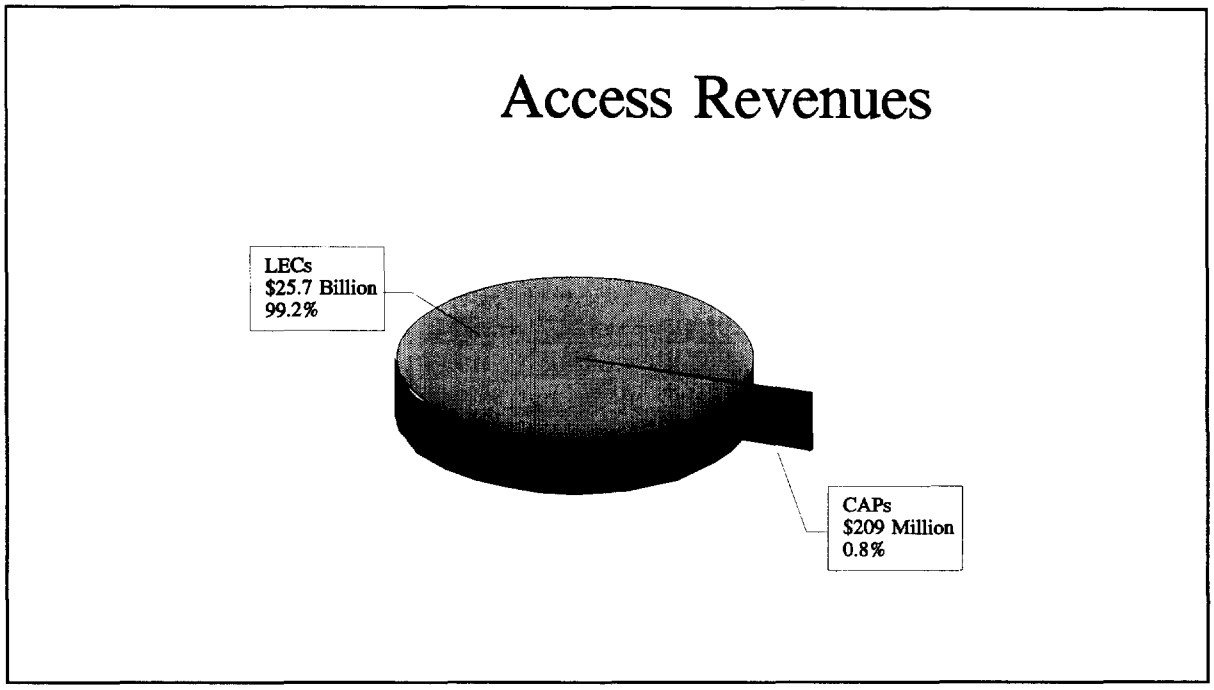

Figure 1.1. Alternative access providers have captured a very small portion of the market

- Wireless services are not substitutes for local service today. The costs, capacity constraints, quality and reliability of wireless services relative to basic local service preclude direct substitution today.

- No cable system offers local telephone service today: These systems require significant capital investments to provide two way telephony. In view of the vast investments that are required it may be some time before the majority of consumers would have a competitive alternative available.

1. Source of CAP data in Figures 1.1 and 1.2 is the *1993 ALT Report* by Connecticut Research. Source of RBHC data is the FCC Statistics of Common Carriers.

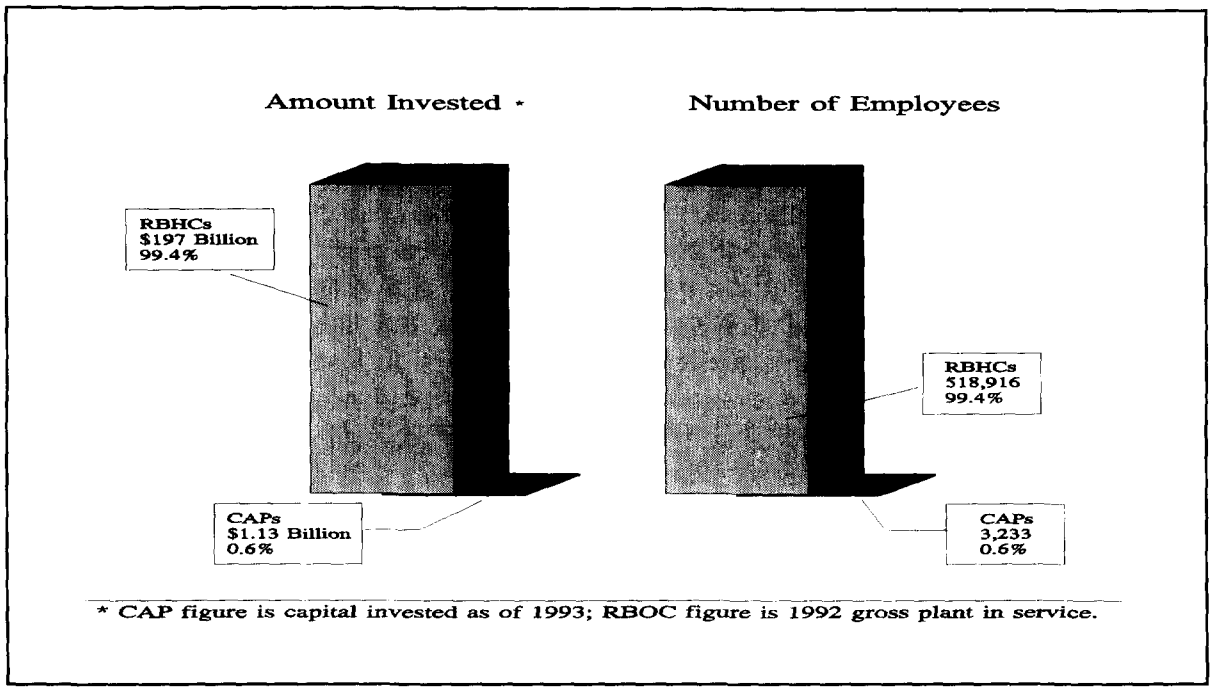

Figure 1.2. Alternative access providers are but a shadow of their LEC competitors in a number of important respects

- Between now and the year 2000 the seven RBHCs will generate roughly *$100-billion* in recurring depreciation charges, creating cash flow for reinvestment at a level that dwarfs all of the potential competitors combined, and all without risk to RBHC shareholders.

- Although major segments of the local telecommunications marketplace may become competitive in the future, the RBHCs, by virtue of their extensive and ubiquitous local networks, will maintain "bottleneck" control of essential interconnection functions for a significant period of time.

The public debate over the course of U.S. telecommunications policy has been heavily influenced by futuristic visions of "information superhighways" whose ultimate development demands BOC involvement in all industry segments, including those "lines of business" from which the BOCs are barred under the terms of the *Modification of Final Judgment (MFJ)*.[2] Incredibly, any such "essential" role for the BOCs serves to underscore their fundamental bottleneck position and belies their claims of effective and pervasive competition: *Clearly, if competition were as extensive and formidable as the BOCs would*

2. *United States v American Tel. & Tel. Co.*, 552 F. Supp. 131, 226,227 (D.D.C 1982) ("*Modification of Final Judgement*" or "*MFJ*"), *aff'd sub nom.* Maryland v. United States, 460 U.S. 1001 (1983).

suggest, then any number of alternative entities would be capable of meeting these demands, were BOC participation not permitted.

Noticeably absent from the discussions that are driving public opinion is any detailed analytical assessment of the potential for real competition in the local exchange markets. This study undertakes to examine the likelihood of viable competition developing in the foreseeable future. Both a market structure and business case point of view are used. The study includes an examination of the types of regulatory structures and requirements that will be necessary to foster local exchange competition, and the potential strategic responses available to the incumbent local carriers. It also includes an assessment of the potential demand for local exchange services offered by alternative local service providers, and some of the hurdles that would need to be overcome in order for such new entrants to attract customers away from an incumbent service provider.

Our analysis leads to one fundamental conclusion: Competition is likely to increase for some *components* of local telecommunications service over the next five to ten years. However, the level and scope of competitive entry is unlikely to be sufficient to eliminate or even significantly reduce the control of essential facilities by the BOCs. Additional time is required for these markets to mature and for effective and *sustainable* competition to emerge.

1.2 Policymakers and regulators can encourage and even nurture the development of competition, but real competition will not develop across the board overnight

Tensions between local telephone monopolies and their potential and actual rivals are hardly a recent phenomenon: Some level of federal antitrust activity with respect to Bell telephone companies has been a fact of life for most of this century. In the *Modification of Final Judgment* that concluded the Department of Justice's 1974 antitrust case against the Bell System, a *structural remedy* was adopted in which the local Bell Operating Companies were separated and barred from reentering several adjacent competitive or potentially competitive markets: Long distance telecommunications service, equipment manufacturing, and content-based information services. *That solution was extremely effective in fostering competition in all three of these adjacent market segments.* Indeed, the most robust competition has developed *in precisely in those segments in which the BOCs were constrained by structural safeguards.*

In the decade since the break-up of the Bell System, the boundary between the core monopoly components of a BOC's service and segments that are subject to competition has shifted. Among other things, the access link between the customer and the BOC switch, once the exclusive domain of local telephone companies, can under certain circumstances

and locations be supplied by others. Competitive Access Providers (CAPs) offer dedicated links interconnecting high-volume users directly with interexchange carriers. Wireless services carriers (cellular and, in the future, PCS) provide radio links between end users and LEC and IXC switches. Cable television systems, long limited to one-way video transmission, can, over time and with substantial investment, be upgraded to support two-way communication, and have the potential to offer an alternative to the BOC "local loop" as the link between the customer and the BOC switch. In all of these cases, however, the BOC switch and public switched local network remain involved with respect to local switched telephone services. Thus, as was the situation prior to the divestiture, BOCs once again both furnish essential services to, and at the same time compete with other telecommunications carriers, in this case alternative "local loop" providers. As they did prior to divestiture, the RBHCs will have the ability to leverage their essential services monopoly into these adjacent markets. These is no less a need to prevent such behavior today as there was a decade ago before the Bell System was broken up.

In contrast, little if any competition has emerged in those markets the BOCs retained at divestiture: The local exchange and access markets. The competition that does exist in the telecommunications industry today has not come easily, or without substantial intervention on the part of regulators and the courts. Time will be required for competition to develop in the local exchange market: Regulations take time to be formulated and implemented, networks take time to be financed and constructed, customers take time to be educated and recruited. Competition as it has developed in the long distance and equipment markets was a long time in coming, and no less can be expected with respect to any of the new markets in which entry may now be possible.

1.3 The long and winding road to competition

In a market economy, *competition,* where feasible, is always considered to be preferable to monopoly, whether that monopoly exists as a franchised public utility or as a government function. Public (government) or private (regulated) monopoly should be limited to those activities in which some degree of "market failure" would exist. Market failure implies a condition where the normal processes of competition would lead to an inefficient result, either due to the presence of extreme economies of scale, extraordinarily high fixed costs, "public good" properties such that a collective consumption decision is in the public interest even though individual consumption decisions might not take place, or activities so essential that by themselves they constitute functions of government. More importantly, where for whatever reason it is determined that a monopoly model is most efficient or otherwise necessary, the scope and extent of that monopoly should be

constrained and confined to only those functions for which the monopoly was rationalized in the first place.[3]

1.4 Initiative and delay: Potholes on the telecommunications highway

The FCC and some state regulatory commissions have for more than three decades been pursuing policies aimed at expanding competition throughout the telecommunications marketplace. Not surprisingly, these efforts have been met with formidable resistance on the part of the incumbent monopolies. Employing litigation and political tactics, the Bell System (before divestiture) and the Regional Bells (after divestiture) have delayed — if not blocked altogether — numerous pro-competitive initiatives. (see Figures 1.3 through 1.6.)

- It took nearly *thirty years* (from the *Above 890* ruling in 1959 until the "equal access" process was substantially completed in 1989) for serious long distance competition to become established.
    - It took *another four years* (until 1993) before inward ("800") services number portability was implemented, severing the link between a customer's telephone number and the provider of the customer's 800 service.
    - There is no consequential competition for dial-up *intraLATA* toll services (many states have not even authorized it), and it won't develop until BOCs are required to provide full equal access, including presubscription, to competing interexchange carriers.
- It took some *sixteen years* from the initial *Carterphone* ruling in 1968 until full CPE competition was firmly established, following deregulation and divestiture, in 1984.

3. Market failure may exist in a variety of forms, and is frequently addressed by some form of regulation. For example, building codes and other public safety measures constitute a societal response to the fact that builders and other contractors may confront an economic incentive to cut corners, while the consumer may lack adequate information and knowledge to determine that the project was designed and constructed in a safe manner. Pollution control regulations, for example, dealing with automobile emissions, toxic waste disposal, and the like are similar regulatory responses to these forms of market failure. Banking and financial regulation is intended to assure safety of consumers' assets and fair access to markets and market information. The presence of *monopoly* is one particular form of market failure in which prices may be excessive relative to costs, output may be restricted, and access to essential facilities by potential competitors of the monopoly may be denied. In the case of public utilities, regulation has traditionally been directed at correcting these forms of market failure.

- In the context of this history, competition at the local exchange level is still at an extremely early stage of the transition to competition.

  - Most states have still not authorized local competition as a legal matter, and even where authorized, incumbent LECs are regularly opposing competitors' applications for certification.

  - Local network interconnection issues are not even close to being settled. It is now some *nine years* since the FCC embraced the "open network architecture" concept in its *Computer Inquiry Three* ruling;[4] yet most ONA issues remain unresolved, and efforts to achieve ONA and unbundled pricing are regularly opposed by BOCs.[5]

  - It took at least *six years* from the date that Competitive Access Providers and others first sought the right to *co-locate* equipment and transmission facilities in BOC central offices until the FCC ordered *limited* co-location (for non-switched services) in 1993.[6] The final phases (including tariffing) of the FCC's "expanded interconnection" investigation and rulemaking efforts are far from completed, and most states do not require co-location for intrastate competitive services.

Persistent BOC efforts to frustrate and delay the transition to competition have, not surprisingly, slowed many of the pro-competitive initiatives and policies of the FCC and some state regulators. Consequently, many of these programs are still far from being fully

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4. Computer III, Amendment to Sections 64.702 of the Commission's Rules and Regulations, CC Docket No. 85-229: *Notice of Proposed Rulemaking*, 50 Fed. Reg. 33581 (1985). *Report and Order (Phase I)*, 104 FCC 2d 958 (1986). *Memorandum Opinion and Order on Reconsideration (Phase I)*, 2 FCC Rcd 3035 (1987). *Report and Order (Phase II)*, 2 FCC Rcd. 3072 (1987). *Memorandum Opinion and Order on Further Reconsideration (Phase I)*, 3 FCC Rcd 1135 (1988). *Memorandum Opinion and Order and Reconsideration (Phase II)*, 3 FCC Rcd 1150 (1988). *Reversed sub nom. People of California v. FCC*, 905 F. 2d 1217 (9th Cir. 1990).

5. For example, all seven RBHCs opposed the *Petition for Investigation* filed on November 16, 1990 by the Coalition of ONA Parties ("CONAP") which asked the FCC to address a variety of access concerns arising from the BOCs' pursuit of an "Intelligent Network." Even after the FCC initiated that proceeding, CC Docket 91-346, most RBHCs have maintained their opposition to any FCC involvement in defining the manner in which non-affiliated providers would be afforded access to IN functions and resources.

6. Teleport was founded in 1983 and in 1987 filed a petition at the FCC for interconnection with LEC networks. Teleport Communications Group, *Petition for Declaratory Ruling*, March 27, 1987.

effective, and full implementation still seems a long way off.[7] As we have shown, notwithstanding efforts that began as early as the 1960s, effective competition did not develop in the equipment marketplace until *after* the divestiture. Similarly, it took nearly eighteen years from the original *Specialized Common Carrier* ruling in 1971 that permitted MCI to construct competitive intercity facilities[8] (which was itself more than a decade after the original *Above 890* initiative) until serious competition developed in the interexchange long distance services business, and only then after the BOCs were excluded from participation in the long distance business.

1.5 "Modern" BOC tactics are even more sophisticated and certainly no less effective

Ongoing efforts by the FCC and by a number of (but by no means all) state commissions to physically "open" the local telephone network wherever possible are still bogged down in seemingly endless litigation and delay. Policies such as Open Network Architecture (ONA), initially adopted in the FCC's *Third Computer Inquiry* ruling[9] and more recent rulemaking proceedings to establish co-location and expanded interconnection rules at both federal and state levels,[10] seek to accomplish this through regulatory prescription. Although the FCC in its *Computer Inquiry Three* ruling expressly relied upon the ONA concept as a basis for removing separate subsidiary ("structural separation") requirements as between the monopoly and adjacent competitive activities of the BOCs, the BOCs have been systematically revising their originally-presented vision of an "open" and unbundled network almost since before the ink was dry on the *Computer Three* decision.

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7. A recent — and important — example of the effectiveness of BOC tactics in delaying the onset of competition can be found in the further postponement of implementation of intraLATA competition in California following disclosures of interference in the California PUC's decisionmaking process by employees of Pacific Bell. *Telecommunications Reports*, October 11, 1993, at 30. Here, the LECs' tactics, even when discovered, still inured to their benefit, in the form of a three- to six-month extension in the date at which competition will be authorized.

8. Specialized Common Carrier Services, 29 FCC 2d 870, 907 (1971).

9. Computer III, Amendment to Sections 64.702 of the Commission's Rules and Regulations, CC Docket No. 85-229: *Notice of Proposed Rulemaking*, 50 Fed. Reg. 33581 (1985). *Report and Order (Phase I)*, 104 FCC 2d 958 (1986). *Memorandum Opinion and Order on Reconsideration (Phase I)*, 2 FCC Rcd 3035 (1987). *Report and Order (Phase II)*, 2 FCC Rcd. 3072 (1987). *Memorandum Opinion and Order on Further Reconsideration (Phase I)*, 3 FCC Rcd 1135 (1988). *Memorandum Opinion and Order and Reconsideration (Phase II)*, 3 FCC Rcd 1150 (1988). *Reversed sub nom. People of California v. FCC*, 905 F. 2d 1217 (9th Cir. 1990).

10. Expanded Interconnection with Local Telephone Company Facilities, CC Docket No. 91-141: *Report and Order and Notice of Proposed Rulemaking*, 7 FCC Rcd 7369 (1992), and In the Matter of Intelligent Networks, CC Docket No. 91-346, *Notice of Proposed Rulemaking*, FCC No. 93-380, August 31, 1993.

THE LONG ROAD TO COMPETITION: CUSTOMER PREMISES EQUIPMENT

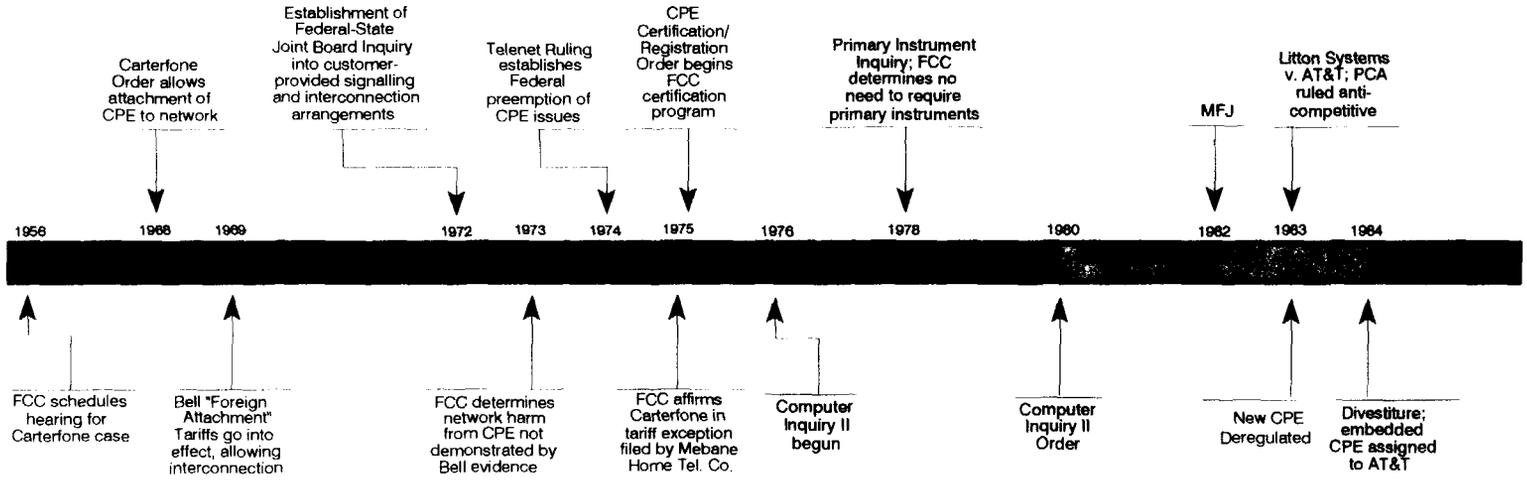


Figure 1.3

THE LONG ROAD TO COMPETITION: LONG DISTANCE

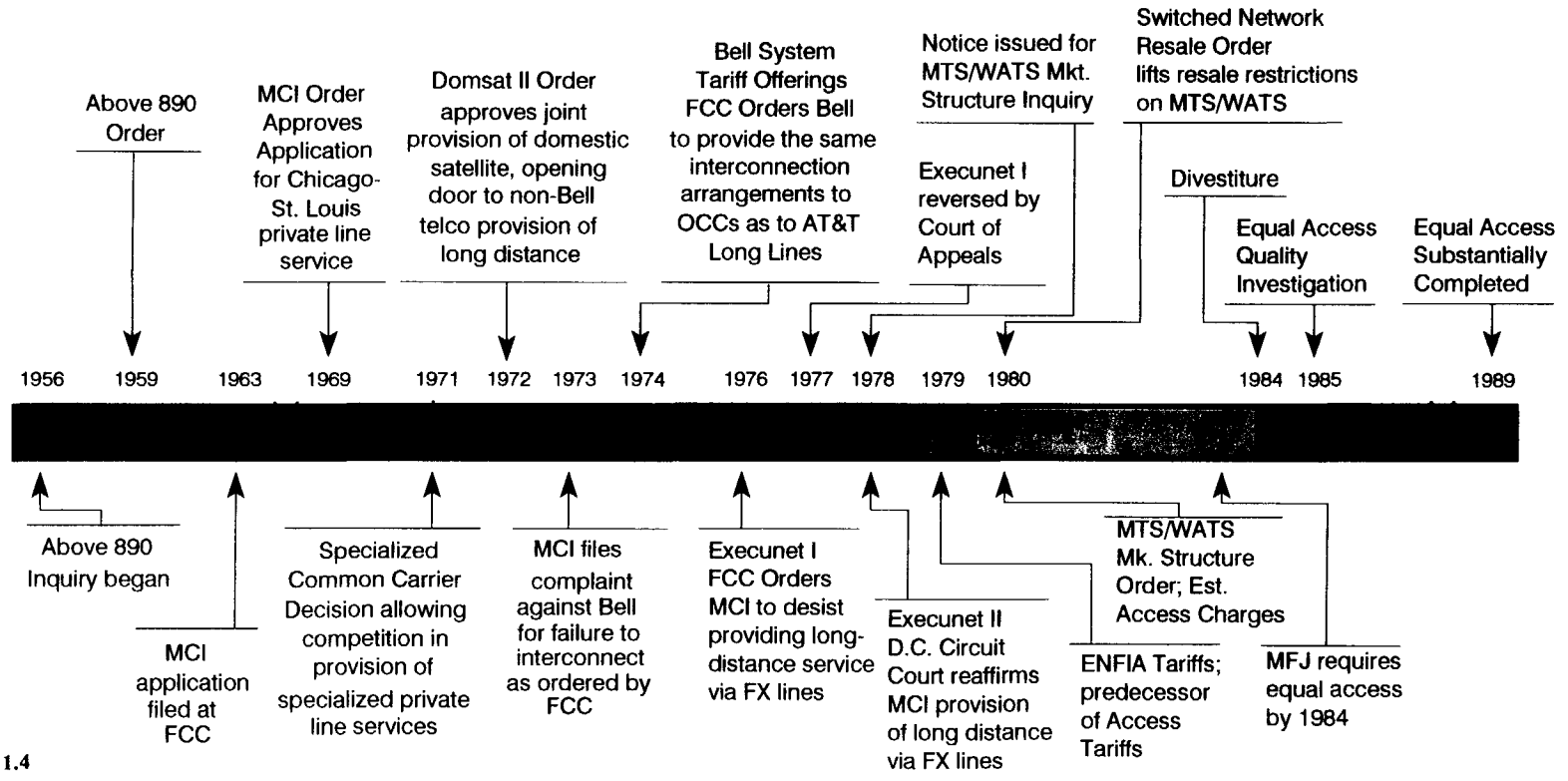
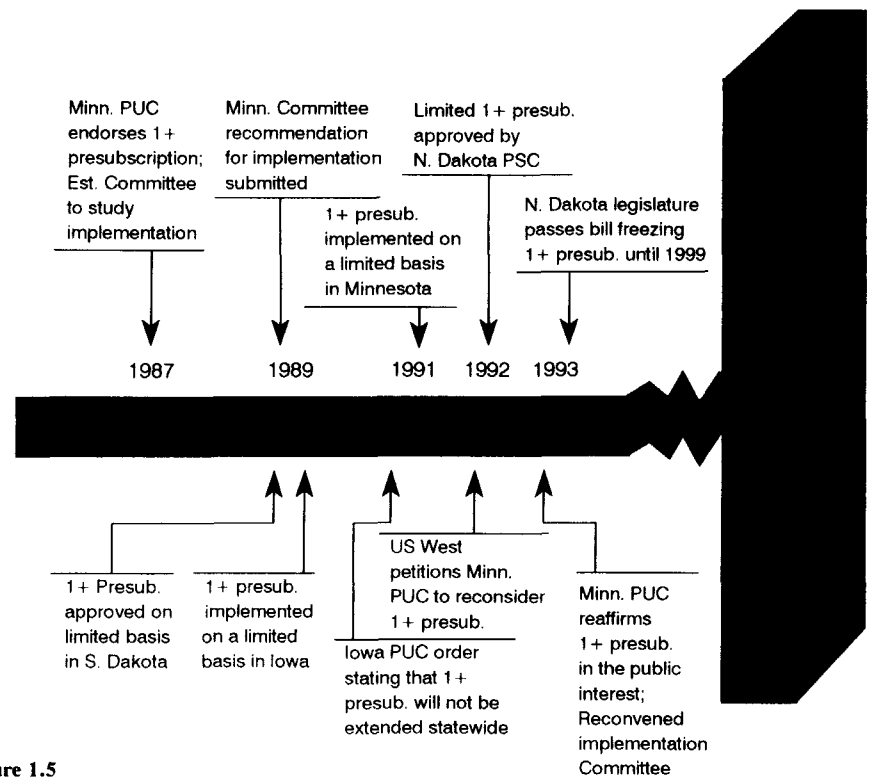


Figure 1.4

THE LONG ROAD TO COMPETITION: INTRALATA TOLL

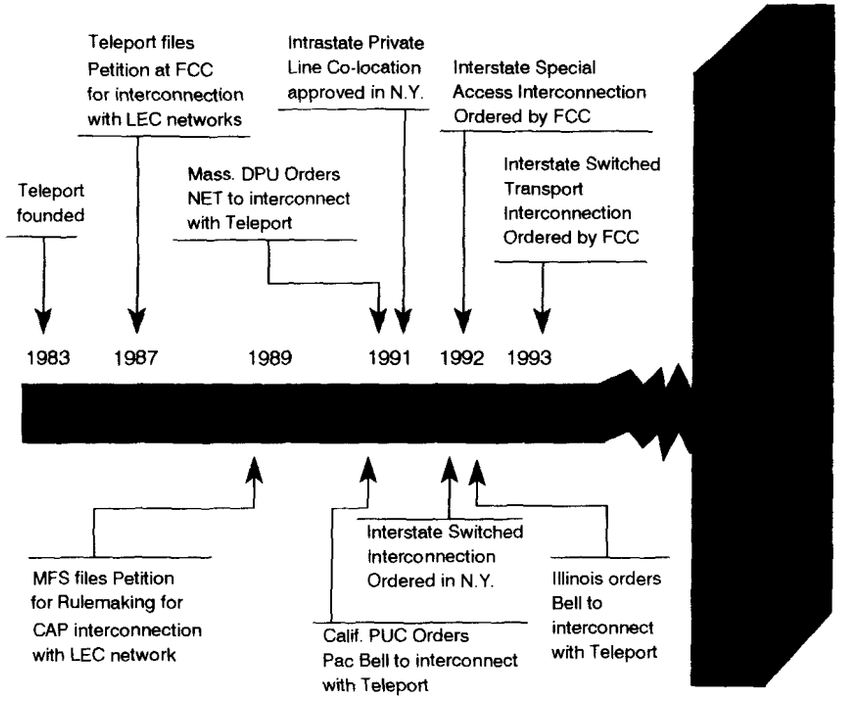


ROADBLOCKS TO NATIONWIDE INTRALATA TOLL COMPETITION

- Basic IntraLATA toll competition not authorized in:
  California (until July 1994), Hawaii, Nevada, North Carolina, Oklahoma, and Virginia
- No ongoing 1+ presubscription proceedings in:
  Alabama, Alaska, Arizona, Arkansas, Colorado, Georgia, Hawaii, Idaho, Indiana, Kansas, Louisiana, Maine, Maryland, Mississippi, Missouri, Nebraska, Nevada, New Mexico, North Carolina, Oklahoma, Oregon, Rhode Island, South Carolina, Tennessee, Utah, Vermont, Virginia, Washington, West Virginia, and Wyoming
- 1+ presubscription proceedings in progress or planned but not completed in:
  California, Connecticut, Delaware, Florida, Illinois, Kentucky, Massachusetts, Michigan, Montana, New Jersey, New Hampshire, New York, Ohio, Pennsylvania, Texas, and Wisconsin.
- Absence of statewide 1+ presubscription in Minnesota, Iowa, South Dakota, North Dakota, and Alaska
- Switch and network rearrangements and upgrades not implemented

Figure 1.5

THE LONG ROAD TO COMPETITION: ALTERNATIVE LOCAL SERVICES



ROADBLOCKS TO ALTERNATIVE LOCAL SERVICES

- Individual CAPs and Alternative Local Service Providers not granted required certification in most states
- Link, port, and local switching/transport charges not unbundled
- Trafffic interchange arrangements and agreements not established in all states
- No local number portablility
- Expanded interconnection/co-location for intrastate special access not authorized in 33 states:
  Alabama, Alaska, Arizona, Arkansas, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Iowa, Kansas, Kentucky, Louisiana, Maine, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, Oklahoma, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, and Wyoming
- Expanded interconnection/co-location for intrastate switched access not authorized in 48 states:
  Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming
- FCC ruling on access to LEC signalling in Competitive Switched Access Networks proceeding (CC Docket No. 91-141, Phase II)

Figure 1.6

The BOCs have approached the "open network architecture" requirement with the same types of strategic responses that they pursued with respect to CPE and long distance competition in the 1970s and 1980s — perhaps with greater sophistication gained through years of experience. The BOCs assert that purported "limitations" of the open network stem from the technical conditions that are inherent in existing stored program and electro-mechanical switches and network signalling arrangements. In the initial round of the ONA implementation effort as mandated by the *Computer III* ruling,[11] the BOCs claimed that these limitations on the "open network" would go away once the "Intelligent Network" under CCITT Signalling System No. 7 ("SS7") and its successors (e.g., Bellcore's "Advanced Intelligent Network" ("AIN")) are in place. Indeed, the "intelligent network" *in principle* does offer the *potential* for a truly open network, if the basic network elements are implemented within a truly *modular and transparent* network architecture, of the type that has developed in the highly competitive computer field. However, the sheer complexity, interactivity and fundamentally centralized nature of an intelligent network/common channel signalling environment also offers the *potential* for strategic manipulation of the network interface points in a way that would severely limit and constrain competitive entry, much as the "Protective Connecting Arrangement" did in the 1970s for CPE or the lack of "equal access" did for competing interexchange carriers prior to the late 1980s.

On December 6, 1991, responding to a *Petition for Investigation* submitted by the user group *Coalition of Open Network Architecture Parties* ("CONAP"), the FCC launched the "*Intelligent Network Investigation*" (CC Docket 91-346)[12] specifically to examine the opportunities and roadblocks to creation of an "open network" in an Intelligent Network context. BOC responses in this proceeding have ranged from uncooperative to outright opposition to FCC involvement.[13] On August 31, 1993, some 20 months after the release of the *NOI* and some 32 months following the date of the initial CONAP petition, the FCC issued a *Notice of Proposed Rule Making* (NPRM) in which it expressly proposed a system

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11. Filing and Review of Open Network Architecture plans, see Computer III, Amendment to Sections 64.702 of the Commission's Rules and Regulations, CC Docket No. 85-229: *Notice of Proposed Rulemaking*, 50 Fed. Reg.33581 (1985). *Report and Order (Phase I)*, 104 FCC 2nd 958 (1986). *Memorandum Opinion and Order on Reconsideration (Phase I)*, 2 FCC Rcd 3035 (1987). *Report and Order (Phase II)*, 2 FCC Rcd 3072 (1987). *Memorandum Opinion and Order on Further Reconsideration (Phase I)*, 3 FCC Rcd 1135 (1988). *Memorandum Opinion and Order Reconsideration (Phase II)*, 3 FCC Rcd 1150 (1988). *Reversed sub nom. People of California v. FCC*, Nos. 87-7230 (9th Cir. June 6, 1990). Filing and Review of Open Network Architecture Plans, CC Docket 88-2, *Memorandum Opinion and Order*, 4 FCC Rcd 1 (1988); *Memorandum Opinion and Order on Reconsideration* (FCC 90-134), May 8, 1990; and *Memorandum Opinion and Order* (Amended Plans) (FCC 90-135), May 8, 1990.

12. In The Matter of Intelligent Networks, CC Docket No. 91-346, *Notice of Inquiry*, 6 FCC Rcd 7256 (1991).

13. *See*, In the Matter of Intelligent Networks, CC Docket No. 91-346, *Notice of Proposed Rulemaking*, FCC No. 93-380, August 31, 1993, at para. 15, notes 18-20.

of "mediated access" to the Intelligent Network.[14] Not surprisingly, BOC responses have been consistently negative.[15] As with CPE interconnection and interexchange carrier equal access, we will no doubt ultimately arrive at some form of "open network" interconnection and interaction scheme that will enable local competition to exist at some level. However, as with the long road to these earlier policy outcomes, fulfillment of the "open network" vision is still many years in the future.

1.6 BOC "incentive regulation" initiatives: Taking the "traffic cop" off the telecommunications highway

One essential feature of the road to competition in all segments of the telecommunications marketplace must be noted and underscored: *Not one of the major competitive achievements would have been possible without affirmative regulatory intervention.* It took the FCC to initiate, the federal courts to validate and ultimately to implement, and the largest corporate restructuring in U.S. history to achieve, equipment and long distance competition. It took efforts by state commissions and by the FCC for competitive service providers to gain even the limited co-location that has now been required. It took FCC and state commission action to unbundle rates for competitive services from basic monopoly service prices. It will require regulatory action to arrive at anything close to an "open" network. And it will surely require regulatory oversight and diligence to prevent remonopolization of adjacent markets if BOC entry therein is authorized.

Among the more recent and more sophisticated BOC efforts to frustrate the effectiveness of regulation in achieving a competitive telecommunications marketplace are programs aimed at dismantling the regulatory process itself. Some of these tactics are discussed in more detail in Chapter 6. For the present, however, we note that so-called "incentive regulation" or "flexible regulation" systems, in which BOCs are allowed substantial pricing and earnings flexibility and are subject to significantly reduced regulatory oversight, have the potential to further postpone implementation of the mechanisms and safeguards essential for effective competition to develop.

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14. In the Matter of Intelligent Networks, CC Docket No. 91-346, *Notice of Proposed Rulemaking*, FCC No. 93-380, August 31, 1993, at para. 3.

15. *See*, Reply Comments of US West Communications, Inc., CC Docket No. 91-346, April 6, 1992, at 1-5.

The development of local exchange competition can be easily frustrated

Many are betting on the idea that the local exchange market can evolve from a monopoly into a competitive structure. However, despite a surface willingness to allow competition, past history teaches that the RBHCs are not going to welcome their competitors with open arms. The ability of the RBHCs to frustrate new market entrants' efforts is substantial; this is particularly true given the protracted start-up times that are often involved in the local exchange service business. The sheer time that it will take to finance and construct alternative local service networks (or to upgrade and convert existing cable networks for telephony) argues for caution in allowing the incumbent carriers additional competitive flexibility at this time.