subsidization extant within RBHC structures and likely to persist and expand should these companies be permitted entry into currently restricted lines of business. They are offered not as a definitive, all-inclusive listing, but merely for purposes of demonstrating the fundamental inadequacy of all existing regulatory devices to entirely eliminate these situations from affecting the telecommunications marketplace:

Major Potential Cross-Subsidy Opportunities for RBHCs

Inter-temporal cross-subsidy flows

- Cross-subsidies resulting from shifts in the monopoly/competitive boundary
- Use of monopoly resources to enter adjacent markets.
- Personnel transfers between monopoly and competitive RBHC organizations
- Research and development costs carried "above-the-line"
- Usage-based (rather than purpose-based) cost allocations

Other non-book cross-subsidy flows

- Transfer prices designed to shifts costs into, or to keep revenues out of, regulated monopoly services
- Use of Customer Proprietary Network Information (CPNI) and BOC marketing resources in adjacent markets

Inter-temporal cross-subsidy flows

Cross-subsidies resulting from shifts in the monopoly/competitive boundary

A basic principle of cost allocation (for example, as between regulated and non-regulated services) is that cost apportionment should somehow be related to the flow of benefits. However, in practice the incurrence of costs and the realization of any resulting benefits does not always occur in the same accounting period, and conditions affecting the potential uses of resources acquired at any given point in time are anything but static. For example, an employee may participate in a program of on-the-job training or more formal education, with the benefits from this effort occurring over a number of years. Investment may be made to develop a new service or product, or to launch a new line of business,

with the returns on that investment not being realized for some period of time.[186] During the intervening period, the regulatory status of the activity for which the investment was made may change from monopoly to competitive, i.e., from "above-the-line" to "below-the-line," in which case there will no longer be a correspondence with respect to the source of the cost and the ultimate recipient of the benefit. The effect of this condition is to create an inter-temporal cross-subsidy with costs charged to core monopoly services in one accounting period flowing to adjacent market activities in a subsequent accounting period.

One might, arguably, justify such flows on the theory that they were merely the result of evolving industry conditions. However, in practice there is strong evidence to suggest that BOCs have engaged in *strategic* economic investments with the full expectation and, in some cases, the knowledge that the activity would ultimately be shifted below-the-line. There is no simple regulatory solution to this problem. Certainly one cannot freeze conditions in an evolving and often volatile marketplace, nor can the pace at which costs produce benefits, as an economic matter, be confined to a single accounting period. But there is another important dynamic at work in this situation: If the BOCs can reasonably *expect* that certain categories of service that are currently treated "above-the-line" for regulatory purposes will ultimately be shifted "below-the-line," then they can pursue strategies in which resources are deliberately deployed in the direction of these potentially deregulated lines of business. Similarly, if BOCs come to believe that *ultimately* policymakers (the courts, Congress, the Administration) will permit them to enter currently restricted lines of business, they can adopt strategies *now* that will produce benefits "below-the-line" in the future (after restrictions are lifted).

ISDN as an example. In some cases, these strategies can be extremely anticompetitive. For example, since 1985 the seven RBHCs have spent more than $8.5-billion to acquire digital central office switches[187] and digital interoffice transport, and to deploy Common Channel Signalling System 7 (SS7) almost ubiquitously.[188] These resources are capable of supporting widespread availability of low-cost digital connectivity (Integrated Services Digital Network (ISDN) access) to substantial fractions of the residential and business subscriber base, yet the BOCs have deliberately delayed the introduction of ISDN by

---

186. The term "investment" as used here refers to "economic investment" rather than to "accounting investment." The commitment of a company's resources to an activity whose benefits will be realized in the future constitutes an economic investment irrespective of the manner in which such costs may be carried on the company's books. For example, the costs of employee recruitment and training, advertising, basic research and product development, among others, are typically *expensed* rather than capitalized, and therefore are charged to the accounting period in which they are incurred.

187. *1988, 1991 FCC Statistics of Common Carriers*, Table 2.9. As of the end of 1991, some 52-million access lines are served by digital central offices. *1991 FCC ARMIS Report 43-07.*

188. By the end of 1991, some 75% of all subscriber lines were served by SS7-equipped central office switches. *FCC 1991 ARMIS Infrastructure Report* 43-07, Table 1.

failing to tariff it, by proposing excessive prices for ISDN access and usage, by restricting the utility of the service (for example, by supporting only intra-switch connectivity) and other tactics aimed squarely at preventing development of ISDN as a widespread form of access for data and other information-age services.[189] BOC actions to withhold general availability of ISDN frustrate goals of non-affiliated information services providers, electronic publishers, and others to develop services and applications that would benefit from the high data rates available with this technology. Yet the pace at which ISDN availability develops *is entirely and solely within the exclusive control of the BOCs*. In view of persistent BOC rhetoric about the need to deploy an "information age" telecommunications infrastructure in the United States, it is thus not unreasonable to surmise that their efforts to limit ISDN availability have been motivated by their own plans to enter vertical information services markets, presenting them with a strong incentive to limit the ability of potential competitors to establish solid market positions of their own. By committing massive amounts of ratepayer-supplied capital to the acquisition of a ubiquitous digital network *while deliberately withholding the availability of advanced digital network services*, the BOCs are effectively shifting those funds into a future period when they themselves will be able to exploit these resources in adjacent, competitive markets. If the BOCs could be disabused of the *expectation* that their political efforts to lift *MFJ* restrictions prior to the development of effective local competition, their incentives would change dramatically. Instead of strategically withholding technology pending their own ability to exploit it, the BOCs would instead *support efforts by non-affiliated companies to develop new uses for BOC network services and resources*. Instead of delaying availability of new capabilities like ISDN, the BOCs would be actively *promoting* their widespread use.

Use of monopoly resources to enter adjacent markets

The prospect that some or all of the *MFJ* line-of-business restrictions may be lifted raises yet another potential for inter-temporal cross-subsidy. While the *MFJ* expressly prohibited the BOCs from engaging in the provision of interLATA *services*, it expressly *permitted* the BOCs to construct and to own interLATA *networks* within their respective regions for purposes of accommodating so-called "official" administrative intra-company traffic.[190]

---

189. For example, in proceedings in Massachusetts, California and Colorado the state regulators have had to intervene to ensure that the BOC in that jurisdiction tariffed ISDN at reasonable rates for residential customers. Absent this intervention, the service would have either not been offered to residential subscribers at all, or would have been priced at prohibitively high levels.

190. *U.S. v. AT&T*, Civil Action No. 82-0192; (D.D.C., 1983), July 8, 1983, as amended July 28, 1983, and August 5, 1983, 569 F. Supp. 1057, 1097-1101. Citing an affidavit of William Weiss (then CEO-designate of Ameritech), Judge Greene identified four categories of "Official Services" for which BOC-owned interLATA facilities may be used:

(continued...)

This "Official Services exception" to the ban on interLATA facilities was allowed, in part, by Judge Greene in explicit recognition of the opportunities available to the BOCs to benefit from new transmission technologies. Citing (then Ameritech CEO-designate) William Weiss, Judge Greene noted:

> Moreover ... [i]n many instances, the BOCs could more efficiently conduct these [official] communications over inter-LATA facilities constructed and owned by the BOCs. The BOCs' ability to deploy new transmission technologies is at least as good and probably better than that of third parties who might provide us with inter-LATA services. The cost of building facilities utilizing those new technologies might be far less than the cost of leasing facilities employing older, and thus higher-priced technologies.[191]

And Judge Greene ruled that

> For these reasons, the Court rules that an Operating Company shall receive [under the *Plan of Reorganization*] inter-LATA facilities which are used solely or predominantly for the performance of its own Official Service functions. If the use made by an Operating Company of a multifunction facility for the provision of exchange telecommunications, exchange access, and Official Services, predominates in the aggregate (including all such functions) over that made of such facility by AT&T, the multifunction facility is required under section VIII(G) of the decree to be assigned to the Operating Company. *The Court further confirms that the decree does not prohibit the Operating Companies from providing*

---

190. (...continued)

(1) The Operational Support System Network is a network of dedicated voice and data private lines used by the Operating Company to monitor and control trunks and switches. These communications links are vital to the proper operation of the network since, for example, they enable Operating Company personnel to measure the maintenance status of trunks and switches and instantly to control equipment and reroute traffic.

(2) The Information Processing Network is a network of dedicated data lines linking the Operating Companies' information system computer. It is used to transmit data relating to customer trouble reports, service orders, trunk orders from interexchange carriers, and other information necessary for carrying out the Operating Companies' business.

(3) Service Circuits comprise a network of largely dedicated voice lines used to receive repair calls and directory assistance calls from Operating Company customers. These communications ensure the maintenance of telephone service and they provide directory assistance to Operating Company customers.

(4) Voice communications are used by the Operating Companies for hundreds of thousands of calls relating to their internal businesses.

Id. at 1098, fn. 179, citing Supplemental Affidavit of William Weiss, April 12, 1983, at 11-12.

191. *Id.* at 1099.

> *their own Official Services, including, if necessary, by the construction of the appropriate inter-LATA facilities.*[192]

This authority to "construct[] ... appropriate inter-LATA facilities" has been used by all seven RBHCs to justify deployment of extensive digital network switching and fiber optic transmission plant that has up to now been used solely for internal traffic. Moreover, because these networks were utilized in the ordinary and necessary course of each RBHC's business, they were treated as *rate base assets* whose capital costs and associated operating expenses were borne by customers of regulated monopoly services.[193]

Construction of these intra-company networks, which began immediately after divestiture in 1984, utilized (the then newly available) fiber optic transmission systems whose potential traffic-carrying capacities greatly exceeded the limited internal needs of each RBHC; indeed, in granting the official services exception, Judge Greene expressly recognized the limited *internal* uses to which these facilities would be put.[194] However, as constructed, these networks interconnect many individual BOC switches and provide a solid foundation for a public interLATA switched network within each RBHC region. If the RBHCs are permitted to offer interLATA long distance services within their respective regions as is called for in pending legislation,[195] it is likely that they will seek to employ some or all of these network resources in offering competitive long distance services to the public. To the extent that some (perhaps significant) portion of the capital costs of these facilities have already been charged to and recovered from BOC ratepayers through rate base treatment, the RBHCs will have accomplished a cross-subsidization of their future long distance business flowing from prior core monopoly services and customers. Efforts to lift the interLATA restriction have been pursued for a number of years by the BOCs themselves. If that ban is lifted, and if the BOCs utilize the interLATA facilities which had been constructed for purposes of supporting official services in the provision of "for-hire" interLATA service, then the BOCs will be seen to have misrepresented the "official services" rationale when that matter was initially argued before the *MFJ* Court.

---

192. *Id.* at 1101, emphasis supplied, footnotes omitted.

193. To the best of our knowledge, no BOC was ever required to demonstrate, beyond the showing made to Judge Greene, that the acquisition of its own intra-company interLATA network was a cost-effective alternative to simply purchasing the required services from an interexchange carrier, *as other organization that do business across a LATA boundary must do, because they are subject to the discipline of the market.*

194. *Id.* at 1100.

195. The legislation, as drafted, would allow the BOCs to petition for authority to enter the InterLATA market.

Personnel transfers between monopoly and competitive RBHC organizations

Another important form of inter-temporal cross-subsidization is the transfer of personnel from the regulated entity to a non-regulated activity or affiliate. Here, the costs of recruitment and initial training, as well as the risks that a particular employee may not be fully qualified, are borne entirely by the regulated entity. Subsequent transfers of trained employees to the non-regulated affiliate have the effect of insulating the affiliate from most of the initial costs and risks associated with building an organization.

This type of cross-subsidy has, in fact, received regulatory attention. The California PUC has adopted rules that seek to provide some compensation to the regulated entity in the event of such personnel shifts, requiring that the non-regulated entity pay a fee to the regulated entity, recorded as an above-the-line revenue, equal to 25% of the first-year salary that will be paid by the non-regulated entity to the transferred employee.[196] Significantly, the going rate for personnel recruitment agencies for similar services, particularly with respect to management and professional personnel, is significantly greater than the 25% fee required in California. Most other state Commissions have not addressed this issue at all, and as a result such fees are rarely paid by the BOCs in actual practice.[197]

Another device for effecting a below-cost shift of personnel to the non-regulated entity is to "rent" the BOC employee to the affiliate on a per-hour or perhaps even a "piece-work" basis. Such rental amounts, where this technique is utilized, are typically based upon the per-hour loaded labor *cost* for the employee, computed by dividing the total weekly loaded labor cost by the total number of work hours per week (e.g., 40). While seemingly "fair" on its face, the effect of this type of arrangement is to make BOC personnel available to the non-regulated affiliate on what amounts to an "on-call" basis, with the entire risk of non-utilization of the full work week being borne squarely by the regulated entity. The typical cost for renting personnel by the hour where no full-time use commitment is involved is considerably higher than 1/40th of a week's loaded labor cost, because in such a case the risk of non-utilization must necessarily be borne either by the temporary employment agency or by the individual employee. Thus, when a non-regulated affiliate of a BOC is offered the opportunity to utilize BOC personnel on a purely as-needed basis, at the same per-hour cost that it would incur if these individuals were employed by the non-regulated entity full-time, the non-regulated activity is underpaying, and the regulated entity is overpaying, for the cost of such personnel.

---

196. *Second Interim Opinion on Pacific Bell's Revenue Requirement, op. cit.*, footnote 184 at 162-3.

197. Even in California, Pacific Bell resisted this obligation with respect to employee transfers into its Pacific Bell Information Services (PBIS) subsidiary. Pacific Bell Information Services, *op. cit.*, footnote 185 at 23.

Research and development costs carried "above-the-line"

Bell operating companies have long supported extensive programs of basic research, systems engineering and product development, and have recovered the costs of such activities *on an as-incurred, current basis* primarily through expenses charged to the regulatory revenue requirement and paid for by customers of regulated monopoly services *in the accounting period in which such costs were incurred.*[198] Prior to the 1984 break-up of the Bell System, most of these programs were carried out at Bell Telephone Laboratories, although some product development work also took place at Western Electric and perhaps elsewhere within the pre-divestiture Bell System organization.[199]

Following divestiture, most of Bell Labs was retained by the surviving AT&T, but some portions of this organization as well as most of the former AT&T General Department[200] were combined into a central services organization (CSO) to be owned on an equal basis by the seven RBHCs. The CSO eventually adopted the corporate name Bellcore (for *Bell Co*mmunications *Re*search). Over the ten years since its formation, Bellcore has pursued many of the same areas of research as its predecessor Bell Labs. In addition, each of the seven RBHCs has formed its own internal R&D organization. In 1991, the seven RBHCs paid a total of $855-million to Bellcore for various services including basic R&D, and spent an additional $308.5-million on in-house R&D programs.[201] As was the case prior to divestiture, each Region's share of Bellcore costs, along with its own R&D outlays, are recovered primarily (if not exclusively) through expense charges included in regulatory revenue requirements and flowed through to

198. Bell Labs expenses were charged to regulated services in two different ways: Most costs associated with basic research and systems engineering (for example, the development cellular radio technology) was passed through to the individual BOCs under the so-called "License Contract" between AT&T and each of the associated companies. License contract expenses were, in turn, included as above-the-line expense charges in the individual BOCs' state and interstate jurisdictions revenue requirements, and were thus included in rates charged for regulated monopoly services. Bell Labs also undertook product development work for the Western Electric Company, which paid the Labs for these programs and recovered those costs through the prices it charged for the various products that it manufactured. Since the vast majority of those products were sold to Bell System companies for inclusion in their respective rate bases, the effect of this process was to flow most of the costs of product development back to monopoly services ratepayers.

199. *See*, e.g., California Public Utilities Commission, Public Staff Division (PSD) *Report on License Contract*, Application (A.) 59849 (1981).

200. The AT&T General Department provided a variety of central staff support services to the individual Bell System operating companies. Most of these functions were either absorbed by the individual regions or transferred to Bellcore following the break-up.

201. Aggregated from 1991 FCC Form M Annual Reports for all BOCs, Schedule I-1, Account 6727, and Schedule I-3.

monopoly services ratepayers. As such, the RBHCs' owners generally bear virtually no consequential amount of risk in connection with these undertakings.[202]

While research and development, by its very nature, does not produce benefits for what is often a considerable length of time following the expenditure of funds, and for many projects may not produce benefits at all, ratepayer support for these programs was traditionally rationalized on the basis that ratepayers as a class would ultimately receive the benefits of the R&D that they had been required to underwrite. While this principle is fundamentally valid in a "closed" and largely static industry structure, it is clearly groundless where competition has entered the market and the boundary between regulated and non-regulated activities is shifted.

Even so, most BOC R&D programs are still carried "above-the-line" and are charged to regulated services, even if their benefits ultimately accrue below-the-line to the RBHC's owners. Indeed, BOCs have been known to expressly ignore specific regulatory directives that such costs be carried below the line. In its 1989 "New Regulatory Frameworks" ("NRF") ruling adopting price cap regulation for Pacific Bell, the California PUC expressly directed Pacific to carry certain R&D costs associated with "voice mail" and other "information services" below-the-line for purposes of establishing the start-up revenue requirement.[203] However, in 1992, following an audit of Pacific Telesis undertaken by the CPUC staff, the CPUC determined that certain costs associated with "below-the-line" Pacific Bell services (principally voice mail) had not been removed from the pre-NRF revenue requirement in establishing the "going in" rate level under the NRF.[204] The Commission ordered refunds totalling $57-million representing some 32 months of overcharging plus accrued interest.[205] Significantly, and notwithstanding its determination that costs of a deregulated activity had been carried above-the-line, the CPUC declined to require that *before-the-fact* assessments be made as to the ultimate regulatory status of the activity. Under the CPUC's rules, development costs can still be carried above-the-line until a specific determination is made that the product or service being developed will be offered, and that the offering will be made on a non-regulated

---

202. It has been suggested that adoption of "price cap" and other incentive regulation systems in place of traditional Rate of Return Regulation (RORR) has the effect of transferring the risk of research and, more generally, of new business development away from monopoly services ratepayers and onto the firm's owners. As we shall demonstrate below, this assertion is highly exaggerated, because if anything price cap type regulation can actually *assure* a continuing flow of cash from regulated services that will be more than sufficient to fund all such activities.

203. California Public Utilities Commission, New Regulatory Framework Decision, D.89-10-031, 33 CPUC 2d 43, at 145-6.

204. *See* California PUC, *Telesis Audit decision*, D.92-07-076, *mimeo.*

205. *Id.* at 7.

basis.[206] Thus, ratepayer funds and risk may still be utilized to finance initial development costs.

In another 1992 ruling, the CPUC did find that Pacific Bell had funded the development of its non-regulated voice mail business with ratepayer funds as far back as 1984.[207] Applying the principle of "reward follows risk," the Commission directed that Pacific reimburse ratepayers for the full "going business value" of the voice mail business, rather than merely reimburse ratepayers for costs actually incurred.[208] That ruling has yet to be implemented, and in a more recent action involving the spin-off of Pacific Telesis Group's cellular and wireless businesses into a divested PacTel Corporation, the CPUC declined to apply the same "reward follows risk" rule and instead directed that only a direct reimbursement, with accrued interest, would be required to compensate ratepayers for costs they were required to pay to finance the development of cellular technology.[209]

Pacific Bell and other BOCs have employed and persist in using tactics whose effect is wherever possible to incur costs above-the-line and thereby to shift costs to regulated activities. Significantly, few state commissions have ever undertaken proceedings to examine such relationships, and those that have seem reluctant to apply the full "reward follows risk" standard in establishing the basis for ratepayer compensation. In fact, however, this relationship between risk and reward has withstood judicial scrutiny and is considered to be an established principle of public utility regulation. In a landmark 1973 D.C. Circuit Court ruling, the court confirmed the principle of "reward follows risk and benefits follow burdens:"[210]

> The ratemaking process involves fundamentally "a balancing of the investor and the consumer interest." The investor's interest lies in the integrity of his investment and a fair opportunity for a reasonable return thereon. The consumer's interest lies in government protection against unreasonable charges for the monopolistic service to which he subscribes. In terms of property value appreciations, the balance is best struck at the point at which the

---

206. *Id.* Appendix A (Settlement Agreement), at 9.

207. *Pacific Bell Information Services, op. cit.,* footnote 185 at 52.

208. *Id.* at 59.

209. California Public Utilities Commission, PacTel Spin-off Decision, D.93-11-011, November 2, 1993, p. 102. Two Commissioners partially dissented from the 3-2 split decision. In those dissents, CPUC President Daniel Wm. Fessler and Commissioner P. Gregory Conlon supported the Division of Ratepayer Advocates' position that a current "going business" valuation was required.

210. *Democratic Central Committee of D.C. v. Washington Metropolitan Transit Commission*, 485 F2d 786 (D.C. Cir. 1973); *cert. denied*, 415 US 934 (1974).

> interests of both groups receive maximum accommodation. We think two accepted principles which have served comparably to effect satisfactory adjustments in other aspects of ratemaking can do equal service here.
>
> One is the principle that the right to capital gains on utility assets is tied to the risk of capital losses. The other is the principle that he who bears the financial burden of particular utility should also reap the benefit resulting therefrom.[211]

The court went on:

> "[T]he cases ... generally agree that consumers have the superior claim to capital gains achieved on depreciable assets while in operation."[212]

Research and development is thus being undertaken by the RBHCs *with the expectation that all such costs would be flowed through to ratepayers in BOC revenue requirements.* BOCs expect to be reimbursed — and are reimbursed — irrespective of the success or failure of individual research efforts. The only "risk" that is actually being assumed by shareholders is the (seemingly) small possibility of disallowance of (perhaps a portion of) such expenses by state regulators.[213]

An after-the-fact reimbursement of previously-incurred costs does not make ratepayers whole for costs and risks that had been charged to regulated services at the time that such costs were incurred. By its very nature, research and development is a speculative activity. Sometimes research efforts bear fruit and lead to the introduction of highly successful and profitable products and services. But more often than not, individual R&D efforts do not achieve such positive outcomes, either because the goal of a particular project remains elusive for technical reasons, the result cannot be economically deployed, or the expected demand fails to materialize.

Several instances of major post-divestiture RBHC R&D failures can be cited. Pacific Bell, after divestiture, expended tens of millions of dollars on its "Project Victoria," a multiplexing technology that never found its way to market and has since been supplanted

---

211. *Id.* at 806.

212. *Id.* at 811.

213. A Report by the California Public Utilities Commission's Division of Ratepayer Advocates (DRA) in the *PacTel Spin-off* proceeding I.93-02-028 confirmed that prior to 1978 disallowances of Bell Laboratories research expenses by the CPUC were extremely rare. Disallowances were ordered following 1978 through 1983. However, since divestiture, the CPUC has not disallowed any Bellcore or Pacific Telesis R&D costs, other than those addressed in the *Telesis Audit* decision (*op. cit.*, footnote 204). *See* DRA Report, I.92-02-028, Chapter 2 (Simmons).

by ISDN. This technology was intended to split an ordinary telephone line into five data and two voice channels. Pacific abandoned Project Victoria within a few years of its initiation.

After-the-fact direct reimbursements (with interest) for previously-incurred R&D costs in effect allow the BOC's owners to use ratepayer funds to finance speculative ventures and then to "buy back" only those that prove successful merely by "reimbursing" its ratepayers for the costs they incurred *for the successful project(s)*. Such an arrangement is analogous to a BOC using $20 of ratepayer funds to place a $2 bet on each of ten horses in a race, and then, once the winner had been determined, "reimbursing" those ratepayers only the $2 *for the one winning ticket* before cashing it in at the payoff window and keeping all of the winnings for its shareholders. Selective, after-the-fact reimbursement does not negate the original risk that had been imposed upon ratepayers rather than shareholders, and regulatory sanctions of such actions serve only to *encourage*, rather than safeguard against, efforts by the BOCs to extend their core monopoly into adjacent markets merely by "paying back the $2."

Usage-based (rather than purpose-based) cost allocations

A particularly insidious and difficult-to-detect form of cross-subsidization arises when plant is acquired for one (strategic or competitive) purpose while its costs are allocated primarily to core monopoly services. This commonly-used device is made possible by the fact that cost allocation rules, to the extent they may even apply to such acquisitions, require apportionment of fixed asset costs on the basis of relative usage of the asset as between core monopoly services and non-regulated services furnished in adjacent markets. *Nothing in FCC or state cost allocation rules attempts to associate the after-the-fact relative usage levels to the before-the-fact economic rationale for the acquisition of the asset.*

Misallocation of Centrex costs. Consider the case of BOC involvement in the market for Centrex-type services with advanced features that require the use of *digital* (as distinct from analog) central office switches. These services compete directly with digital PBX machines that might be acquired by individual customers for installation by them on their own premises. A digital central office switch may also be used, however, to provide "Plain Old Telephone Service" ("POTS") to core monopoly services customers. A BOC may elect to replace an older analog electronic central office switch with a digital machine primarily so that it can compete with PBX suppliers in the business telephone systems market. Yet once the new switch is acquired and, say, 90% of its ports are assigned to POTS subscribers, a usage-based cost allocation will result in fully 90% of the total capital outlay being assigned to core monopoly services, with only 10% of the capital outlay having to be recovered from the competitive services for whose benefit the acquisition was actually made.

The opportunity and potential for this type of misallocation portends to be substantially greater as the BOCs initiate programs aimed at deploying broadband distribution infrastructures providing "fiber to the home" or "fiber in the loop" capacities, and pursue large-scale interactive information services ventures requiring greatly expanded network "intelligence." Here, the motivation behind such potentially massive investment programs is clearly entry into "new" broadband service markets and adjacent interactive information services and video entertainment fields. Yet if these broadband and intelligent network facilities are also *utilized* (whether or not actually *required*) to support conventional voice telephone services, the BOC may be able to assign a large share of the costs of its broadband plant to, and recover those costs from, its *existing* core monopoly local exchange telephone services.

This would not by any means be the first time that BOCs have constructed outside plant distribution networks with strategic, competitive goals in mind. In 1983, the California PUC found that Pacific Bell's plant utilization was inappropriately low, and imposed an explicit "underutilization penalty" on the Company that would remain in effect until the problem was corrected.[214] This phenomenon of underutilization occurred throughout the Bell system. In the mid-1970s, the average loop plant utilization for the Bell System companies was reported in the 70% range.[215] However, by the mid-1980s, subscriber outside plant (OSP) occupancy for the BOCs had noticeably declined. For example, the loop plant utilization reported by Pacific Northwest Bell — Washington (now US West Communications, Inc.) declined from 69.9% in 1975 to only 60.8% in 1988.[216] Several years later, in a study undertaken by Economics and Technology, Inc. for the Washington Utilities and Transportation Commission (WUTC),[217] ETI found that the low plant utilization rates present in Washington State could be explained by the precipitous drop in the demand for Centrex service that began shortly after 1980.

ETI noted that OSP utilization levels would have remained essentially constant had the demand for Centrex (relative to PBX trunks) remained at pre-1980 levels. Unlike PBX systems that require a relatively small complement of loop pairs (PBX trunks) to serve a much larger number of individual PBX station lines (for a station:trunk ratio that is typically in the range of 8:1 to 12:1, depending upon overall system size and traffic patterns), Centrex service requires one loop pair for *each* station line since the switching

---

214. California Public Utilities Commission, D.83-12-025, 13 CPUC 2d, at 479.

215. *See* Selwyn, Lee L., Patricia D. Kravtin, and Paul S. Keller, "An Analysis of Outside Plant Provisioning and Utilization Practices of US West Communications in the State of Washington," prepared for the Washington Utilities and Transportation Board, March, 1990, Attachment 8.

216. *Id.*

217. *Id.* at 9.

function takes place at the telephone company central office. ETI speculated that the BOC in that state had continued to construct subscriber outside plant assuming that the same loop demand density would persist. Thus, the BOC continued to deploy plant to serve new commercial development *on the basis that at some point a customer at that business location would want to order Centrex.* This policy, of course, resulted in large quantities of unused ("spare") outside plant, whose costs would have to be spread to other services.[218]

Significantly, the costs of "spare" capacity (in outside plant, switching, or in any other network resource) are typically allocated among the various services which share these resources on the basis of *in-service quantities*. Thus, if 10% of the *active* loop pairs are used for Centrex, then 10% of the "spare" loops are assigned to Centrex. Such a "usage-based" method of cost allocation fails entirely to reflect the underlying *purpose* for which the costs in question were incurred: In this instance, the relatively low utilization levels are directly attributable to BOC efforts to assure sufficient in-place capacity to fulfill orders for Centrex if, as and when they might arrive, yet by assigning costs of the shared resource on the basis of after-the-fact *in-place* demand, the overwhelming majority of the "spare" is assigned to core monopoly local exchange telephone service.

More generally, formal FCC cost allocation rules actually *codify* precisely this type of after-the-fact usage-based assignment. As set forth in Part 64, costs of plant or other resources used in common for the provision of regulated and non-regulated services are to be allocated on the basis of the highest proportion of use for non-regulated services anticipated over the ensuing three years.[219] While the federal standard is not strictly binding on state regulators with respect to *intrastate* services, most states have either explicitly or by default adopted the federal standard.

The overall effect of this type of after-the-fact usage-based allocation is to permit the BOCs to charge disproportionately high percentages of the cost of new plant to traditional core monopoly services. The following illustration will demonstrate why this is the case. Capital investments are, by their nature, long-term commitments that involve large initial outlays for plant that will remain in place for a number of years. Typically, plant capacities are determined on the basis of lifetime requirements, not initial utilization levels. Thus, for a typical project, overall utilization will tend to be low in the early years, and then rise as growth and demand increase. While this pattern is common for virtually any type of plant, it is even more pronounced when "new" services are involved. By their nature, new services — and particularly those subject to significant externalities of demand

218. *Id.* at 22.

219. 47 CFR § 64.901(b)4.

and supply,[220] typically require prolonged "ramp up" periods. Thus, the relative *proportion* of the capacity of newly-acquired plant that will initially be used in the provision of these services will be extremely small. Capital costs are, of course, spread over the asset's life by means of annual depreciation charges, so in principle the proportion of the asset's cost (in the form of depreciation expenses) assigned to the new and potentially non-regulated service should increase as demand for those services grows. Significantly, however, the accelerated method by which capital assets are depreciated under existing FCC rules has the effect of capturing a disproportionately large share of the lifetime cost in the earliest years of the asset's life. Hence, under the Part 64 3-year highest-use rule, the non-regulated service would be assigned far less than its lifetime relative use of the shared asset. This condition is demonstrated quantitatively and graphically in Table 6.1 and Figure 6.2 below.

It is also worth observing that the Part 64 and similar cost allocation processes, which depend heavily upon *forecasts* of relative use, do not provide for any consequential penalties to the LEC in the event that the forecast is wrong. Thus, if the LEC assigns 10% of the cost of a shared facility to the non-regulated service based upon a forecast of demand over the next three years, when (after-the-fact) the usage turns out to have been at the 25% rate, there is no process in the FCC's cost allocation rules either for retroactively reassigning the additional 15% of cost to the non-regulated category, nor is there any penalty for underestimating demand imposed upon the LEC.[221] As a result, the LEC is actually *rewarded* for mis-forecasting, in that by so doing it has been permitted to charge additional costs to core monopoly services and in the process reduce costs assigned to, and increase profits available from, its non-regulated activities.

That existing cost allocation methods and rules are not adequate to address the problems caused by strategic BOC investments in plant that will be used both for core monopoly and adjacent market non-regulated competitive services is underscored by the growing concern about this issue by state regulators. Commenting on the cost allocation implications of New York Telephone Company's network modernization plans, the New York PSC Staff concluded:

> However, the cost allocation rules were not designed to (and will not) safeguard basic services from overly optimistic projections of non-basic revenues. Since there is currently no systematic tracking of revenues or

220. The rate of growth in demand for broadband services will be heavily driven by the availability of software and vertical applications services and (with respect to video telephony) by the total number of subscribers who adopt this technology.

221. Contrast this situation to the estimate income tax requirements established by the Internal Revenue Service, where taxpayers are penalized for under-forecasting their tax liability, and are required not only to repay the underforecast amount, but are subject to interest charges and penalties as well.

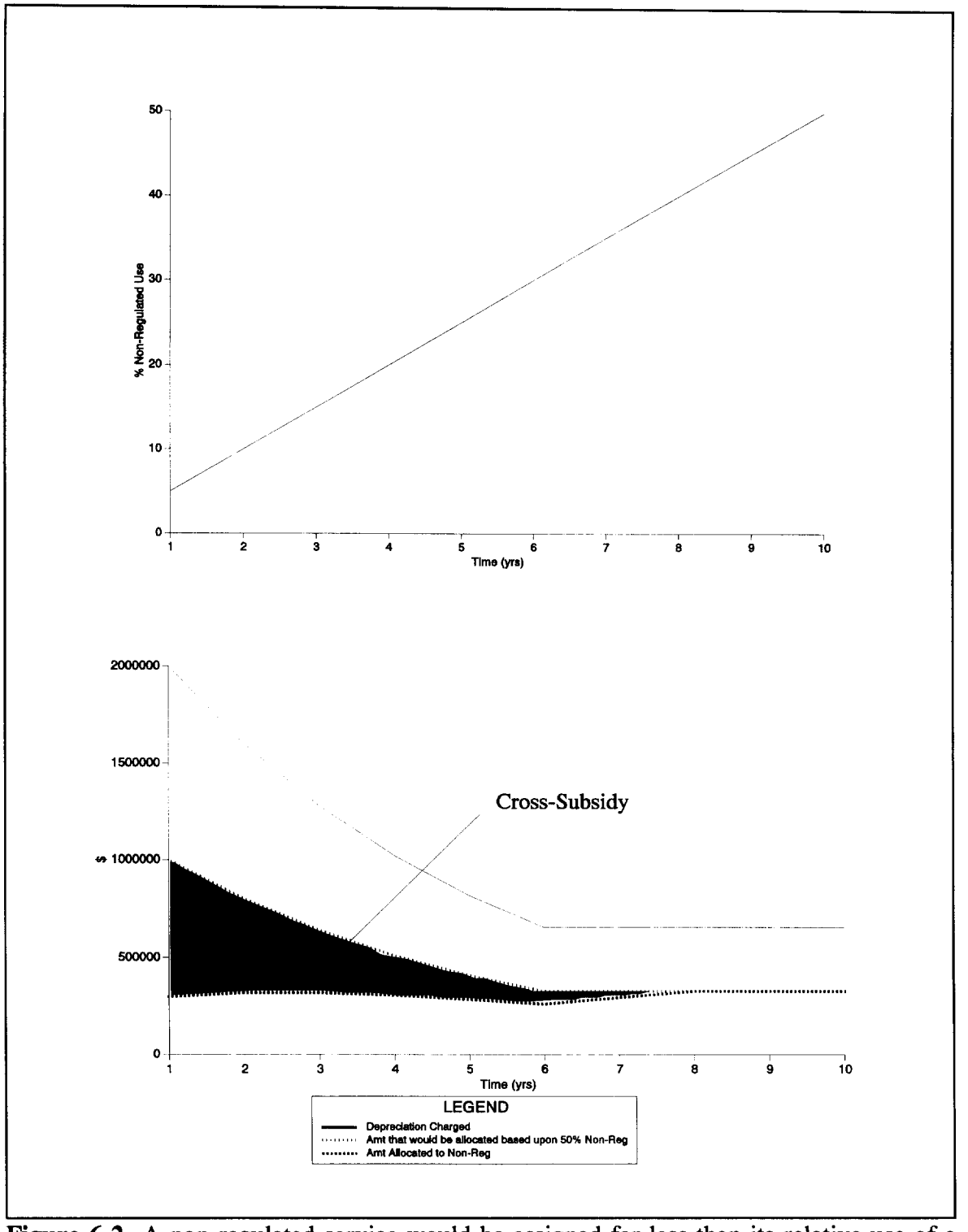

Figure 6.2 A non-regulated service would be assigned far less than its relative use of a shared asset

Table 6.1

ANALYSIS OF ASSIGNMENT OF SHARED ASSET COSTS
BETWEEN REGULATED AND NON-REGULATED SERVICES

(Assuming 10-years life and $10-million gross investment)

Year	% Non-Reg Use	3-Yr Highest Use Rule	Annual Deprec Charge	Deprec Based Upon 50% Non-Reg	Amt Allocated to Non-Reg
1	5%	15%	2,000,000	1,000,000	300,000
2	10%	20%	1,600,000	800,000	320,000
3	15%	25%	1,280,000	640,000	320,000
4	20%	30%	1,024,000	512,000	307,200
5	25%	35%	819,200	409,600	286,720
6	30%	40%	655,360	327,680	262,144
7	35%	45%	655,360	327,680	294,912
8	40%	50%	655,360	327,680	327,680
9	45%	50%	655.360	327,680	327,680
10	50%	50%	655,360	327,680	327,680

> retrospective comparisons with the projections, revenue shortfalls of this nature normally would not be detected, and taken into account in the ratemaking/cost [process].[222]

The context in which this observation was offered was a proposed network modernization program the economics of which were heavily dependent upon the telephone company's ability to generate revenues from new advanced services; for purposes of the NYPSC's examination, it was assumed that all such services — and the plant required to support them — would remain above-the-line. However, where services are shifted below-the-line into separate operating units or corporate affiliates, the focus shifts from revenue generation to cost allocation. In the New York case, as the PSC Staff noted, NYT had an

222. NYPSC Case 91-C-0485, *Staff Report* dated November, 1992, at VII-38 — VII-39.

incentive to overestimate revenues from advanced new services so as to present an economic basis to proceed with its proposed investment program. Where the new services will be offered on a non-regulated basis, the utility has an incentive to underestimate relative use so that a disproportionately high share of the total cost of the new plant will be assigned to core monopoly services. Either way, there is no formal tracking mechanism and certainly no retroactive correction or recoupment mechanism that would in any material sense hold the BOC accountable for deliberate or inadvertent mis-forecasting.

At the very least, and consistent with the NYPSC Staff's recommendation, BOCs could be required to systematically track their actual revenue experience with the revenue projections, or relative usage with usage forecasts, that are relied upon to support BOC investment and cost allocation decisions. The tracking report would also include quantitative demand data for each of the new services, as well as an explanation for any significant differences between the projected and actual demand levels.

More generally, however, if BOCs are allowed to pursue investment programs that jointly support core monopoly and competitive services, effective regulatory safeguards would require that they adopt a fundamentally different approach to cost allocation, one that focuses on the before-the-fact *objectives* of the plant acquisition programs rather than on after-the-fact and self-serving measures of relative use. [223]

Other forms of cross-subsidization

Transfer prices designed to shifts costs into, or to keep revenues out of, regulated monopoly services

One long-standing method of shifting costs into, and revenues out of, the regulated entity is through the intra-corporate transfer price mechanism. Transfer prices are the booked amounts at which assets, services and other resources are shifted among affiliates of the same corporation. The transfer price mechanism can be utilized to remove funds from the regulated entity either (a) by establishing an excessive price for purchases made by the regulated entity from its affiliates,[224] and/or (b) by establishing an inadequate price — or perhaps no price at all — for transfers of assets or services from the regulated entity

223. See, *e.g.*, the cost allocation principles presented in a proposal developed by the NYPSC Staff and several parties in Case 91-C-0485. Letter from Peter McGowan, Staff Counsel, to Honorable Gerald Lynch, Administrative Law Judge, Case 91-C-0485, September 11, 1992, Attachment 2.

224. As used here, the term "excessive price" implies a price above the cost, including the authorized rate of return on investment, for the transferred resource.

to non-regulated affiliates. Both tactics have been utilized in the past by BOCs, and have been well documented through state and federal investigations.[225]

One of the most recent incidents involved purchases of equipment and supplies by the two NYNEX BOCs — New York Telephone Company and New England Telephone — from the "supply" affiliate of NYNEX Corporation known as NYNEX Materiel Enterprises Company. Rather than make their purchases directly from outside vendors, the two NYNEX BOCs funneled their business through Materiel Enterprises which marked up the prices that it paid to outside suppliers. Investigations by both the New York PSC and the FCC further revealed that Materiel Enterprises employees were engaged in collusive behavior vis-a-vis vendors, favoring some and excluding others, thereby paying excessive prices for items purchased in this manner.[226] On the basis of these investigations, the FCC determined that Material Enterprises had overcharged the two BOCs by some $118.5 million over the period from 1984 to 1988. In addition to making restitution to the extent of $35.5-million in the interstate jurisdiction, the Materiel Enterprises company was disbanded and its functions were assumed either directly by the LECs or by a newly-created subsidiary jointly owned by NYT and NET.

Use of Customer Proprietary Network Information (CPNI) and BOC marketing resources in adjacent markets. One of the important sources of integration efficiency between the core monopoly services and adjacent competitive market activities can be found in the BOCs' ability to engage in joint marketing efforts.[227] While such arrangements present opportunities for anticompetitive behavior when engaged in by monopolist, which we address below, they also provide avenues for cross-subsidization through off-book transfers of resources and valuable information from the core monopoly services business to non-regulated businesses and affiliates.

Any joint marketing activity will necessarily require that resources be shared. These resources may include customer lists, customer proprietary network information, sales and marketing personnel, and order processing, customer records management, and billing systems, among others. For the most part, the description "joint sales and marketing" is a

---

225. Amendment of Section 64.702 of the Commission's Rules and Regulations (*Second Computer Inquiry*), Final Decision, 77 FCC 2d. 384 (1980), California Public Utilities Commission, I.85-03-078, D.86-01-026, January 10, 1986, 20 CPUC 2d 237, at 266.

226. See, e.g., *Apparent Violations of the Commission's Rules and Policies Governing Transactions with Affiliates, Order*, FCC 90-328, October 3, 1990, and New York Public Service Commission, *Proceeding on Motion of the Commission to Investigate Transactions Among New York Telephone Company and Its Affiliates*, Case 90-C-0912.

227. Joint marketing of regulated and non-regulated services was initially prohibited under the FCC's *Computer II* separate subsidiary rules. However, the Commission subsequently rescinded its earlier prohibition, and such joint marketing efforts are now quite common.

mischaracterization of the actual relationship, inasmuch as it implies some sort of "cooperative" effort on the part of the two organizations (i.e., the regulated and non-regulated businesses). In fact, "joint sales and marketing" in this context almost always means the use by the *non-regulated* business of the monopolist's *regulated* sales and marketing resources. For example, in an initial customer contact (often the customer's first contact with a telecommunication's provider), a LECs's business office commercial representative, in the course of processing a customer's request for the installation of basic local telephone service, may undertake to "sell" the customer non-regulated services like voice mail or, in the future, alarm services, on-line information services, and other "enhanced" services furnished by business units and affiliates of the BOC. Thus, the BOC has access to all customers in its jurisdiction because of their need for the monopoly service offered by the BOC.

For example, evidence adduced in the Pacific Bell Information Services case[228] indicated that Pacific Bell commercial representatives were actively promoting the services of the utility's non-regulated voice mail affiliate in the course of routine customer contacts. No specific assignment of Pacific Bell employee time or costs to the voice mail entity was being made, but PBIS would pay Pacific Bell 13% *of the first month's revenue* for each successful referral. Since the first month's revenue was typically in the range of about $6, this "sales commission" amounted to something in the range of $1 or less per sale.

This type of sales arrangement is typical of BOCs that offer non-regulated voice mail and other services to their basic telephone services subscribers, which in fact most now do. Besides utilizing sales forces and other resources of the regulated entity, these non-regulated businesses gain advantageous access to customer information, that is simply not available to any competing provider because it is information obtained by the BOC in its capacity as a monopolist. For example, the knowledge that a given customer has just ordered basic local exchange telephone service is uniquely known to the BOC commercial representative *at the time of the initial sales contact itself.* Thus, long before this information could be made available to any competing enhanced services provider, the BOC can "close the sale" and hence remove the customer from contention. To accomplish this, the BOC must incur costs to train and supervise its commercial representatives with respect to the sale of enhanced services, and those representatives themselves must allocate a portion of their time to this activity. There is no evidence that anything even remotely close to an adequate or fair apportionment of these costs to the enhanced services entity is

228. *Pacific Bell Information Services, op. cit.*, footnote 185.

being made by any BOC at this time.[229] Instead the cost is ultimately born by the customer of the monopoly service.

A similar situation exists with respect to residential Inside Wire Maintenance services, which have been deregulated in most states.[230] These are sold in the form of service agreements for which monthly charges, usually ranging from about 50 cents to $2.00, apply. Sales of IW maintenance programs are typically handled exclusively by the same commercial business office representatives who process orders for regulated basic local telephone service. Indeed, to the best of our knowledge *no BOC has established a separate inside wire maintenance sales organization* to support these largely non-regulated offerings. Moreover, the relatively small monthly charges for inside wire maintenance are included on the customer's monthly BOC bill, for which a small cost imputation to the non-regulated service may be made. However, any allocation of joint billing and collection costs to non-regulated inside wire maintenance services would typically be made pursuant to Part 64 type rules, which generally require, in this case, an allocation based upon the relative percentage of lines on the printed bill that are devoted to the non-regulated service.[231] Moreover, it is highly unlikely that a BOC would offer comparable billing and collection services to a competing inside wire maintenance provider (assuming that any exist) at the same allocated cost imputation level.[232]

The limits of effective regulation

The foregoing discussion depicts a consistent and pervasive pattern of explicit and implicit cross-subsidization of non-regulated activities in adjacent markets that in various ways imposes costs upon customers of core monopoly local exchange telephone services while creating unique competitive advantages for the BOCs. While regulators have attempted to identify and to address these conditions, their effectiveness in limiting cross-subsidization flows has been extremely limited. There is no substantial likelihood that

229. More recently, in Ameritech's December 7, 1993 petition before the DOJ for a permanent waiver of the interexchange long distance restriction, Ameritech seeks permission, after some limited period of time, to market its own long distance service to its local service subscribers without being required to provide a list of other long distance carriers offering service in the customer's service area.

230. The FCC, in its 1988 ruling in CC Docket 79-105, ordered that all simply inside wire maintenance services be unbundled from basic exchange service and be deregulated. In 1989, on appeal by NARUC, this ruling was reversed and subsequently a few states have reinstated regulation for IW maintenance services. (*Inside Wiring Reconsideration Order* 79-105 (1 FCC Rcd 1190, *further recon.* 3 FCC Rcd. 1719 (1988), *remanded on other grounds, NARUC v. FCC*, 880 F 2d 422 (D.C. Cir. 1989).

231. 47 CFR § 64.901 and § 64.902.

232. Delaware Public Service Commission, Docket No. 92-47, Ex. 52 (Revised 1/27/93), at 94-5.

regulation will be capable of establishing adequate safeguards against expanded cross-subsidization by BOCs if they are permitted to enter the restricted lines of business, and potentially to do so in a massive way. At the very least, a far more rigorous, *economic* definition of cross-subsidization will need to be adopted, and meaningful and enforceable safeguards will need to be established to protect both customers of core monopoly services and competitors in adjacent markets and segments of the local exchange market. Any of these solutions will, however, require considerable regulatory resources and effort, and will undoubtedly engender significantly greater economic costs and regulatory burdens than retention of the far simpler line-of-business restrictions.

7 BOC RESPONSES TO COMPETITIVE ENTRY: A PATTERN OF ANTICOMPETITIVE BEHAVIOR

As we have shown in earlier chapters, Bell Operating Companies possess both the incentive and the ability to dictate many of the conditions that would-be rivals will confront as they seek to compete with the incumbent dominant local carriers. In particular, Chapter 6 discussed the extensive opportunities that are available to the BOCs to engage in effective cross-subsidization of competitive activities and strategic investments, and reviewed the various difficulties that regulators confront in their efforts to identify and quantify these subsidy flows. In general, the precise extent to which competitively-supplied services will be viable as practical substitutes for BOC offerings will be strongly influenced by BOC strategic behavior, which can be both proactive and reactive in nature. The BOCs have historically been very aggressive in employing strategies and tactics designed to repel entry. A number of additional key strategies and tactics are outlined in the table below. In this chapter, we explore many of these patterns of behavior, which together provide the BOCs with a fully-equipped arsenal of potential responses to entry in local exchange markets and ample funding to support their own entry into adjacent markets.

7.1. LEC Price Cap/Incentive Regulation Schemes

BOC entry into and potential dominance of adjacent non-regulated markets will be greatly facilitated by the local telephone monopolies' ability to deploy massive amounts of concentrated capital and physical and human resources in these new lines of business.[233] From the standpoint of potential competitors, the BOCs' access to liquidity — often at minimal or no shareholder risk — creates formidable barriers that could be difficult for even large, diversified competitors to overcome. But the BOCs' ability to shift resources accumulated through the provision of monopoly services into adjacent markets, to the extent it effectively bypasses normal market resource allocation mechanisms, has the potential to create deadweight economic losses on a massive scale. If, for example, the BOCs are successful in dominating broadband markets through sheer force rather than by offering "the better mousetrap," their potentially incorrect technology choices can waste vast amounts of the nation's wealth and delay — or worse, even foreclose — the availabil-

233. Appendix 7a provides detailed operating data on LECs.

Potential LEC Responses to Competitive Entry

- Outright prohibition and highly restrictive interconnection policies;
- Access discrimination — denial, delay, overpricing and inferior access;
- Restrictions and prohibitions against resale of services;
- Strategic pricing targeted at services subject to actual or potential entry;
- Strategic cost allocation devices designed to support pricing tactics;
- Strategic use of depreciation and capital budgeting processes to supply capital for entry into future competitive markets;
- "Incentive regulation" schemes that lock in historically high price levels and thereby insulate BOC monopoly services from reflecting technology-driven cost decreases;
- Strategic investments in new technologies financed largely or entirely with revenues from core monopoly services;
- Strategically-timed transfers of business segments from regulated to non-regulated status at a point where start-up costs and losses are replaced by profits; and
- Political strategies aimed at achieving reduced regulation and increased flexibility to pursue a wide range of strategic behavior.

ity of new telecommunications and information services.[234] By effectively "bypassing" the capital rationing processes of a market economy, the telephone monopolies reduce the pool of available capital while at the same time chilling interest in entry through the sheer scale of their own physical plant.[235] Whether or not that particular plant, or the architecture and technology with which it was designed, is the most efficient and market responsive solution to meeting future telecommunications needs, will thus never be subjected to a market test.

Significantly, the BOCs' ability to assemble large blocks of capital and the potential for egregious error are not unrelated: Rather than compete for capital with other firms and industries, the telephone monopolies can — and do — fund their acquisitions of new equipment and facilities through the prices they charge for essential monopoly telephone services. So-called "price cap" and other incentive regulation schemes do not materially alter this fundamental condition, because the price adjustment mechanism itself can easily be designed so as to assure an uninterrupted source of funds with which to pursue large-scale investment programs. This is accomplished by overstating the "going-in" rate level and the extent of input price growth and/or by understating the potential rate of productivity growth in formulating the price adjustment mechanism. Indeed, as interest in "price regulation" has escalated, disputes over these parameters has essentially replaced the traditional debate over the appropriate rate of return under an RORR regime.

In devising price cap, price freeze, or other "alternative" forms of regulation, the BOCs have "cherry-picked" their way through past and projected conditions and events, selecting those that produce the best financial result from their perspective.

- Although price regulation is intended to be *prospective* in nature and application, the BOCs have relied heavily upon *historic* productivity growth rates as a basis for the "productivity offset" factor. In some cases, these historical time frames went back

234. As previously noted, we have already witnessed this effect with respect to ISDN. By deliberately withholding a valuable technology, the BOCs have foreclosed numerous other firms from developing products and applications based upon an ISDN platform. *See* Statement of Mitchell Kapor in Massachusetts Department of Public Utilities Docket 91-63, June 13, 1991, at 1-2. Indeed, the ISDN experience provides a graphic demonstration that BOCs can decrease competition in the adjacent information services market, *and that they are indeed doing so by withholding ISDN from application to those markets.*

235. This effective bypass of the normal capital rationing process also prevents the economy from choosing to devote these resources to other, non-telecommunications sectors, including other "public good" programs like education and research. In some cases, these choices are made by the political process instead of through the action of the marketplace (e.g., the recent decision by Congress to discontinue further spending on the Superconducting Supercollider). However, because telecommunications utilities are afforded "first in line" access to capital (and often without even regulatory review of proposed construction expenditures), they are able to effectively bypass both the political and the market allocation mechanisms.

over thirty years.[236] Consequently, rather than reflect prospective productivity gains attributable to the unprecedented pace of technological change in the telecommunications industry, these plans have effectively "locked in" out-of-date cost trends.

- While the FCC and California PUC each recognized early on that the initiation of price cap incentive regulation plans should, in principle, stimulate further efficiency gains, in most other jurisdictions in which the BOCs have sought alternative regulation schemes they have proposed either no offsets or minimal offsets to recognize productivity and efficiency improvements.

- In a number of cases, the BOCs have proposed to couple significant pricing flexibility for "non-basic" services with an incentive regulation package. While the services proposed to be subject to "pricing flexibility" may in certain situations confront effective competition, more often than not these services continue to confront relatively price-inelastic demand in highly monopolistic markets. Consequently, the BOC is able to achieve significant revenue growth overall, far in excess of the nominal "price cap" itself, simply by applying the maximum allowable rate increases to "non-basic" non-competitive services.

- While the BOCs have sought to portray their interest in incentive regulation as a willingness to accept symmetric treatment with respect to both earnings increases and shortfalls, the plans have generally been structured so as to protect the BOCs from severe losses while at the same time assure in some cases almost limitless gains. This is accomplished, first, by defining a set of so-called "exogenous" cost changes that may be flowed through, dollar-for-dollar, to ratepayers. While *in theory* such cost changes could be in the negative direction, as a practical matter they will more often than not be positive.[237] Second, while the early FCC and state PUC incentive regulation plans included a "sharing" arrangement whereby earnings in excess of a "benchmark" rate of return level would be shared between the company and its ratepayers, recent regulatory and legislative initiatives have sought to remove the

---

236. Testimony of Dr. Laurits R. Christensen, Indiana Bell Exhibits LRC-1 through LRC-5, Indiana Regulatory Commission Cause No. 39705; Testimony of Dr. Laurits R. Christiansen, Illinois Bell Exhibits 5.0 through 5.5, Illinois CC Docket No. 92-0448; Testimony of Dr. Laurits R. Christiansen, Public Utility Commission of Ohio Case No. 93-487-TP-ALT, Ohio Bell Exhibit 26.0 with attachments 26.1 through 26.5.

237. For example, excluding the effects of regulatory mandates, during the period of 1989-92, Pacific Bell proposed positive Z-adjustments of $196.47 million and negative Z-adjustments of $24.2 million. The California Public Utilities Commission approved a net positive Z-adjustment of $95.46 million for that period (Sources: D.89-12-048, Vol. 34 CPUC 2d 155, 162-3, 176-9, Dec. 18, 1989; Resolution T-14235, Dec. 1990; Resolution T-14668, Dec. 18, 1991; Resolution T-15160, Dec. 16, 1992).