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ADDENDUM TO
DECLARATION OF JOSEPH FARRELL AND BRIDGER M. MITCHELL

BENCHMARKING AND THE EFFECTS OF ILEC MERGERS

The attached declaration was prepared with respect to the proposed merger of SBC and Ameritech, and was submitted as part of the record of the Federal Communications Commission in that matter. This addendum is submitted to affirm that the economic analysis set forth in the attached declaration applies to the proposed merger of Bell Atlantic and GTE, CC Docket No. 98-184.

Dr. Joseph Farrell
Dr. Bridger M. Mitchell

November 23, 1998

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BENCHMARKING AND THE EFFECTS OF ILEC MERGERS

DECLARATION OF
JOSEPH FARRELL AND BRIDGER M. MITCHELL

October 14, 1998

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Benchmarking and the Effects of ILEC Mergers

Declaration of
Joseph Farrell and Bridger M. Mitchell

Executive Summary. We discuss the role of comparative information, benchmarking, and relative-performance schemes, both in traditional telecommunications regulatory activities (including support of universal service) and in the active promotion of competition called for in the Telecommunications Act of 1996. As has been widely recognized in the United States and internationally, benchmarking is a powerful and beneficial tool in a wide variety of such contexts. We discuss average-practice benchmarking (as for price caps and high-cost support), best-practice benchmarking (as for number portability and interconnection), and heightened scrutiny of worst practices (as for interconnection and access reform). Mergers among large ILECs significantly weaken the power and effectiveness of benchmarking.

I. The Value of Benchmarking

Until facilities-based competition is widespread, regulators will be called upon to regulate Incumbent Local Exchange Carriers (ILECs). Benchmarking, also known as yardstick competition, or relative-performance evaluation, is a very valuable regulatory tool because it helps regulators, customers, and nascent competitors become better informed about incumbents' capabilities. This can enable society to achieve some of the benefits of competition even before workable market competition exists. In this report, we explain how the practice of benchmarking can and does work in U.S. telecommunications, and why the ability to compare the performance or behavior of large ILECs is therefore valuable and not lightly to be sacrificed.

A. The Fundamental Information Disadvantage

The modern economic analysis of regulation[1] starts from the view, which is wholly consistent with our own experience in telecommunications regulation, that regulators generally have much less accurate and less complete information about the opportunities and constraints facing a regulated firm than does the firm itself.

For example, the firm is likely to be much better informed than regulators about its economic costs (and perhaps even its accounting costs) and the extent to which the firm might be able to reduce those costs if given sufficient incentives to do so. The same is true of other aspects of performance, such as measurable service quality or delivery intervals. The firm will

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[1] See, for example, David P. Baron, "Design of Regulatory Mechanisms and Institutions," p. 1347, in R. Schmalensee and R. Willig, eds., *Handbook of Industrial Organization,* Volume 2, p. 1347-1447, (Amsterdam: Elsevier Science Publishers), 1989.

also be better informed about "softer" qualitative indicators, such as the level and types of access to unbundled network elements, provisioning and ordering practices, and harder-to-measure quality characteristics of services. Most especially, a single regulated firm is likely to be far better informed than its regulators about the opportunities for innovation.

Modern economic analysis traces much, if not all, of the problems of efficient regulation to this fundamental information disadvantage. If regulators knew what the firm could, and could not, accomplish with efficient effort, they could design an incentive system that simultaneously brings prices close to costs and also creates efficient incentives for the firm.[2] Because the regulator is imperfectly informed, however, its efforts to control the firm's pricing almost inevitably conflict with creating incentives for efficient behavior. Regulation in the public interest is the art of trading off these two goals. As a result, anything that reduces the regulator's informational disadvantage is likely to help achieve more efficient outcomes.

B. The Ratchet Effect and Incentive Regulation

Regulation often aims to keep prices commensurate with costs and not to allow a firm to exploit its monopoly position by charging excessive prices. Because of the information problem outlined above, regulators have often used a dominant firm's historic costs as a basis on which to set future prices; absent better information, past costs may be a sensible predictor of future costs.

[2] See, for example, David Sappington and Dennis L. Weisman, *Designing Incentive Regulation for the Telecommunications Industry*, The MIT Press and the AEI Press, 1996, p. 3.

However, this "cost of service" approach creates an incentive problem, known as the *ratchet effect*. Consider a regulated firm that, by exerting some unverifiable effort, or incurring some costs that are difficult to identify, can reduce its verifiable costs. If regulators adjust the prices the firm is allowed to charge, to keep them aligned with its verifiable or recorded costs, the firm's incentive to undertake this effort, or incur these costs, will be weakened. A similar ratchet problem can arise if the firm's prices for existing services are adjusted downwards by regulators – through a cost-allocation proceeding or otherwise – in response to the firm's introduction of new and profitable services.

The ratchet effect is generally recognized as one of the most troubling inefficiencies associated with traditional "cost-of-service" or "rate-of-return" regulation. For this reason, and others, regulators have increasingly turned from cost-plus regulation to incentive regulation mechanisms, most notably price caps. For example, the Federal Communications Commission first used price caps to regulate the interstate retail prices of dominant Interexchange Carriers (IXCs) and currently applies price caps to the interstate access charges of large ILECs. Once the initial level of a firm's price index has been established, the index (net of inflation) must be adjusted annually by the X-factor – the estimated annual rate of productivity gain – and by any exogenous changes in costs.

An *ideal* price cap would perfectly predict the *optimized* path of *future* productivity improvement by each ILEC and employ that as the X-factor. The firm's future prices would then be independent of its actual productivity performance, and the firm would thus have the correct incentives to achieve productivity gains; at the same time, consumers would not have to pay charges or fees in excess of cost.

Regulators can, of course, only estimate this optimal X. Because they have very limited information, they cannot have complete confidence that the right value of X has been chosen.[3] Given this (rational and proper) limited confidence, however, a further problem arises. If the monopolist's profits are higher than expected, it may be difficult to insist that the chosen X-factor was correct, and there will be pressure to revise the X-factor upward. Similarly, if the monopolist's profits are lower than expected, there will be pressure to revise the X-factor downward. There may also be perceived legal restrictions on the regulator's ability to sustain a price-cap constraint for a carrier whose rate of return falls too low.

However, any such *ex post* revision recreates the *ratchet effect* – a good performance today results in a higher target in the future. If a regulated firm anticipates this effect, it foresees that some of the rewards for good current performance will be counterbalanced later when a higher level of performance is demanded. Anticipating the adjustment, the firm will exert less effort to improve its performance than it would if its future prices were (as in the ideal price cap) independent of its own performance. Thus, the ratchet effect, in tandem with other "softenings" of incentives, such as sharing rules and low-end adjustments, undermines the desirable incentive properties of price-cap regulation for a single monopolist, and blurs the distinction between price-cap regulation and old-fashioned cost-plus regulation. If regulators lack the information needed to set and confidently adhere to a choice of X over a long period, a substantial portion of the potential gains from incentive regulation may be unattainable.[4] Thus, *ideal* price caps are unrealistic, and

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[3] As FCC Chairman Kennard recently remarked, "[s]ome say the current X-factor of 6.5% is too low, others say it is too high." Press Statement by Chairman William E. Kennard on Access Charge Reform, October 5, 1998.

[4] See, for example, Statement of Stanley M. Besen, Reply Comments of the National Cable Television Association, Inc., *In the Matter of Policy and Rules Concerning Rules for Dominant Carriers,* CC 87-313, August 3, 1989.

realistic price caps for a single monopolist do not fully overcome the fundamental information and incentives problem.

These problems are by no means restricted to the regulation of interstate access. Another important area in which very similar issues arise is the following. To provide universal service support, regulators must determine an appropriate level of support for serving customers in a high-cost area. Clearly the revenues available from customers – not only for supported services, but also available "follow-on" revenues – should enter into this calculation. Yet, there would be a ratchet problem if a high-cost carrier's subsidy were reduced dollar-for-dollar in response to increases in the per-line revenue that it achieves. Better information on the *potential* for such revenue increases, from sources that do not create such a ratchet effect, would allow the Commission and the Joint Board to calculate sufficient subsidies without adverse incentive effects.

C. Limiting Exclusionary Conduct

The Commission, of course, does much more than simply set the maximum prices for interstate access charges. In most or all of its activities, better information about the actual and potential abilities of dominant firms would help the Commission to combine efficient incentives with protection of consumers. We restrict ourselves here to one important and topical example.

Especially since the passage of the Telecommunications Act, the Commission has rightly been concerned to open up local exchange and exchange access markets to competition. Because of the special features of those markets, Congress judged that mere removal of legal barriers to entry would be insufficient, and instead set up a competitive scheme under which ILECs are required, even against their interests, to cooperate with competitors. ILECs control local network services and resources that are essential to rival Competitive Local Exchange Carriers (CLECs).

Similarly, IXCs and competitors offering combined local and long-distance voice and data services rely, to varying degrees, on interconnection and access arrangements with the ILECs. Until facilities-based local competition is sufficiently widespread (or can be rapidly created by these competitors), therefore, state and federal regulators must enforce ILECs' duties to provide such cooperation.

This is a very difficult regulatory task and requires information that is difficult to acquire. The ILECs' competitors – particularly those wishing to offer innovative services – often require new network services and access arrangements, in particular for interconnection to the local network and collocation of competitors' equipment at ILEC facilities. Especially in these cases, the Commission is unlikely to have sufficient independent information about what arrangements are technically feasible, how the particular arrangements affect the quality of service provided to rivals, and what costs the ILECs must incur to supply them. As a result of this information problem, there is a real risk that ILECs may refuse to provide access, engage in delay and slow deployment, and then finally only offer service at degraded quality, or (especially) offer new services in an inefficient manner.[5]

D. Benchmark Regulation Ameliorates the Information and Incentives Problem

Fortunately, telecommunications regulators in the United States have a powerful tool that can greatly improve their acquisition of information relative to that of a regulator facing a single monopolist. Using information about a number of similarly-situated ILECs, the regulator can set benchmarks or yardsticks by which to assess past performance of an individual ILEC and

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[5] See Declaration of Michael L. Katz and Steven C. Salop, "Using a Big Footprint To Step On Competition: Exclusionary Behavior and The SBC-Ameritech Merger," October 14, 1998 (henceforth Katz and Salop). See also B. Douglas Bernheim and R. D. Willig, *The Scope of Competition in Telecommunications,* The American Enterprise Institute for Public Policy Research, Working Paper, October 25, 1996, Chapters 3 and 4.

establish incentives for its future performance. Benchmarks improve the operation of incentive regulation for two closely related reasons.

First, comparisons against the performance of a number of other ILECs provide the regulator with more *information*. In the case of price caps, additional information increases the regulator's ability to estimate the actual, but unknown, efficiently-achievable performance (X*) of a regulated ILEC. This not only tends to make the chosen X-factor closer to the correct level, but should strengthen the regulator's resolve (crucial to achieving the incentive benefits of price caps) not to renegotiate in the face of unexpectedly profitable or unprofitable results for an individual company. In other cases, comparisons with other ILECs allow the regulator better to assess what practices are technically feasible, to scrutinize unusually poor performance, or even to set as a standard the best practice. In short, the regulator's *information problem* is ameliorated.

Second, if future performance standards to be applied to an ILEC are based on a benchmark such as industry-wide average productivity, then an individual ILEC's own behavior affects those future standards to only a limited extent. As a result, the ILEC has less *incentive* to alter its current behavior to account for future revisions in the performance standard than it would if that standard were based primarily on the ILEC's own past performance. In short, the regulated firm's "ratchet" *incentive problem* is ameliorated.

E. Value of Benchmarking Widely Recognized

This observation that benchmarking is a valuable tool of efficient regulation is neither novel nor surprising. In contrast to "ideal" but infeasible price-cap mechanisms, the use of benchmarks based on average performance is a robust regulatory tool that greatly reduces the ratchet problem *without* the need for the regulator to obtain extraordinary levels of information.

Similarly, the use of benchmarks makes it much easier for regulators to make credible long-term commitments to desirable incentive mechanisms. Best-practice benchmarking and the use of comparative information to focus heightened scrutiny on poor practices are similarly robust and valuable tools of regulation and emerging competition.

Since the divestiture of the local bottleneck portions of the former AT&T into seven independent holding companies, the Commission has correctly recognized that the ability to make benchmark comparisons among BOCs, RBOCs, and ILECs in general constitutes an important regulatory tool. As described more fully in the attachment to this Declaration,[6] since the 1984 divestiture of the Bell System the Commission, the Justice Department, and the Courts have all acknowledged and relied upon the ability of regulators to employ benchmarking. The existence of a number of large, independently-managed ILECs provides a range of technical, economic, and operating experience from which the Commission can draw to assess proposed regulatory actions, establish performance standards, and set parameters in incentive-regulation formulas.

The U.S. Court of Appeals for the District of Columbia Circuit noted:

> [T]he existence of seven [R]BOCs increases the number of benchmarks that can be used by regulators to detect discriminatory pricing. . . . Indeed, federal and state regulators have in fact used such benchmarks in evaluating compliance with equal access requirements . . . and in comparing installation and maintenance practices for customer premises equipment.[7]

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[6] See "Benchmark Comparisons," Attachment A to Ameritech's Comments on the Report and Recommendations of the United States Concerning the Line-of-Business Restrictions (*United States v. Western Electric Co.*), 1987, D.C. Cir. Civ. Action No. 82-0192, filed Mar. 13, 1987.

[7] *United States v. Western Electric Co.*, 993 F.2d 1572, 1580 (D.C. Cir.), *cert. denied,* 126 L. Ed. 2d 438 (1993).

Outside the United States, other regulatory bodies and competition authorities have also recognized the value of benchmarking in dealing with monopoly or dominant firms. For example, in the United Kingdom the regulator of the water and sewerage industry uses industry-wide data to set a price cap for each firm.[8] The European Commission has adopted benchmarks for evaluating access prices that are based on the lowest interconnection rates charged in each Member State. These examples are discussed in more detail below.

II. Forms of Benchmarking

Although there are many ways in which benchmarking may be implemented, it is helpful to consider three categories: the use of *averages*, the use of *best practices,* and the use of *heightened scrutiny of worst practices*.

A. Average-Practice Benchmarking

In its price-cap regulation of interstate access charges, the Commission has rightly expressed concern that reviewing the level of the X-factor every two years and updating it periodically, if undertaken on an ILEC-specific basis, would substantially weaken the incentive for the ILEC to improve its productivity (the ratchet effect). However, different ILECs' capabilities for productivity improvement are highly correlated, because many of the same technological opportunities, new products, and demographic trends apply to all. Consequently, this is a suitable opportunity for a relative-performance scheme, in which price changes can be set based on industry-average rather than on carrier-specific productivity measures.[9]

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[8] Office of Water Services (OFWAT), "Future Charges for Water and Sewerage Services," July 1994, pp. 17-19.

[9] FCC 97-159, *Price Cap Performance Review for Local Exchange Carriers,* Fourth Report and Order in CC Docket No. 94-1 and Second Report and Order in CC Docket No. 96-262, adopted May 7, 1997, released May 21, 1997, paras. 167 and 181 (henceforth *Price Cap Performance Review for Local Exchange Carriers).*

When the average is made up of a large number of ILECs, each constituting only a small share in the industry average, the resulting ratchet effect is small. That is, each single LEC's incentive to increase its productivity is only modestly weakened through the ratchet effect: its own productivity experience is only a small part of the industry averages that will affect the updated standard in the future. In setting X-factors in price caps for access services, the initial level of charges for each ILEC was established on the basis of that ILEC's historic costs, while the X-factor whichthat determines the annual reduction in the access price index is set based on *industry-wide* trends in productivity. Specifically, the Commission has adopted measures of annual productivity increases based on studies that estimate productivity changes using historical data for large LECs. Several studies use RBOC-only data or data for RBOCs plus several larger independents.

Similarly, in setting high-cost support for universal service, the Joint Board decided to base subsidies on the difference between an estimate of cost and an average of monthly revenue per residential line.[10] The assumed "benchmark" customer revenue per line is intended to be based on *industry-wide average* figures that will evolve over time.

In this sub-section, we discuss the use and efficiency of such "average-practice benchmarking," in which each ILEC is held to a standard that depends on (past, or expected) industry-wide performance rather than its own.

To fix ideas, suppose that annual adjustments to each ILEC's access charges are constrained by an industry-wide benchmark — a price index based on an industry-wide average of all ILECs' productivity changes — rather than directly determined by the performance of the individual ILEC.

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[10] Federal Communications Commission, CC Docket 96-45, *In the Matter of Federal-State Joint Board on Universal Service,* Report and Order, adopted May 7, 1997, released May 8, 1997, para. 259.

Roughly speaking, the ratchet effect under such a price cap regime is proportional to the extent to which an ILEC's lower costs affect the access prices that it receives. Suppose, for example, that a large ILEC has 20% of the nation's access lines and that it reduces its own interstate access costs by $1 per line. Under "average-performance" benchmark regulation, the firm's profits will initially rise by the amount of its lowered costs, $1 per line.[11] In due course, the Commission will recalibrate the X-factor to account for the nationwide improvement in average productivity. How much of the gain from this productivity improvement is thus recovered from the more efficient ILEC?

First, we should note that under the access price-cap system as it exists, no change would be likely for some period of time. There are lags in reporting cost data, in estimating recent industry-wide productivity gains, and in implementing a new X-factor based on such estimates.[12] In addition, the Commission has tended to adjust the X-factor rather than the levels of access charges (thus bringing levels down only gradually).[13] With all this in mind, it may be reasonable to suppose that, on average, the level of interstate access price responds to the hypothetical $1 reduction in per-line costs some three to five years after that reduction takes place.[14]

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[11] This assumes that the firm's prices do not change. If the firm instead chooses to lower its prices below the cap, profits will presumably rise by more – by a revealed-preference argument. When regulation is binding, however, this is unlikely to be a major consideration.

[12] In setting the currently applicable X-factor in May 1997, the Commission relied on a series of multi-year averages of the total factor productivity of the RBOCs and gave the most weight to averages calculated between 1987 and 1995. The new 6.5% X-factor was then made effective from 1996, the beginning of the interim access charge period. *Price Cap Performance Review of Local Exchange Carriers*, para. 139.

[13] In principle, such a feedback could lead to all kinds of complexities. But it seems likely that in the medium- or long run there will tend to be convergence of levels. In this connection, the fact that the new X-factor set in 1997 was made effective from 1996 may suggest an interest in levels as well as in rates of change.

[14] This analysis addresses only the Federal component of the problem. States differ in their treatment of ILEC productivity improvements. Many states apply price-cap regulation to the intrastate charges of large ILECs. In some, the rates mirror the interstate access rates, but in others it is not clear to what extent regulation relies on benchmarks.

A large ILEC with 20% of the nation's access lines keeps its $1 per line saving for perhaps four years; after that it keeps just 80% of it, because recalibration based on industry-wide average performance recaptures 20% of the saving.[15] At a real discount rate of 10%, the net present value of the ILEC's gross private return per line is the sum of these discounted savings for many years, or approximately

$$\$(1 + .91 + .83 + .75) + .8*(.68 + .62 + .56 + \ldots..) = \$9.50$$

compared to the

$$\$(1 + .91 + .83 + .75 + .68 + \ldots) = \$11$$

that it would gain if its prices never had to respond to its cost reduction – the case of an "ideal price cap."[16] Thus, under these assumptions, the adjustment of the X-factor "taxes" away approximately 14% (i.e., 9.50/11 = .86 = 1 - .14) of the ILEC's incentive to reduce its access costs.

This compares with a 68% tax if the price facing an individual ILEC were adjusted, with the same timing, based on its own recorded performance.[17] In other words, the relative-performance scheme, in this case average-practice benchmarking, leads to a very substantial improvement in these incentives. As we will discuss below, however, as LECs consolidate by merger, the ratchet disincentive that concerns the Commission becomes considerably more severe.

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[15] Note that access lines that are not controlled by ILECs whose performance enters into the productivity estimates should not be counted in the assessment of these shares.

[16] The numbers 1, .91, .83, .75. .68, ... are successive powers of the one-year discount factor (1/1.10).

[17] The ILEC retains only the first four terms above, $(1 + .91 +.83 +.75), or $3.49, out of the gross present value of $11.

B. Best-Practice Benchmarking

A second, and perhaps even more important, use of benchmark or yardstick techniques is less formal and can be applied to qualitative as well as quantitative characteristics of ILEC service offerings. Rather than calculating an industry-wide average figure and applying it to all ILECs, regulators may be able to use a "best" practice offered by one ILEC to learn what is possible for all and to require all ILECs to implement it.

Interconnection arrangements for rivals may be particularly suited to "best-practice" benchmarking. Under the 1996 Telecommunications Act, an ILEC has the duty to provide interconnection at any technically feasible point within its network.[18] By probing the practices of individual ILECs, the Commission endeavors to assess whether ILECs' claims about technical feasibility are warranted, and to monitor the quality of interconnection. It can then establish as a standard for all ILECs a benchmark based on the best observed (or offered) practice.

Number Portability Example

A telling example of best-practice benchmarking is provided by the standards established for local number portability. In the Commission's proceedings, many ILECs claimed that the Location Routing Number (LRN) method was not a cost-effective way of implementing local number portability and instead proposed initially to implement a query-on-release (QOR) method. Specifically, six RBOCs, GTE, and USTA petitioned the Commission to be allowed to use the QOR implementation, claiming they would achieve significant cost savings by using this method.[19] If implemented, however, the QOR method would result in lower-quality service on

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[18] Telecommunications Act of 1996, Sec. 251 (c)(2)(C).

[19] FCC 97-74, *Telephone Number Portability,* First Memorandum Opinion and Order on Reconsideration, released March 11, 1997, para. 34.

calls to telephone numbers ported to competing local carriers and thus help ILECs to exclude rivals from local service markets. A single exception (Ameritech) planned to deploy the LRN method, which provides equal-quality service to calls of all carriers, at the outset.

The Commission concluded, on the basis of this experience, that it was feasible for all ILECs to implement the LRN method. It found that the LRN method would most likely result in long-run cost savings and that the QOR method, if implemented, would harm competitors who must rely on ILEC networks in order to route calls.[20] As a result, the Commission adopted best-practice performance standards based on the LRN method.[21] Had Ameritech joined the other large ILECs in claiming that LRN was impracticable, it seems unlikely that the Commission would have had the knowledge or confidence to require such standards, or to do so on the same timetable. Depending on the relative strength of Ameritech's motive for implementing LRN and SBC's motive for not doing so, LRN might well have been substantially delayed had the proposed merger of SBC and Ameritech been accomplished (or even contemplated) at the time.

Effects of Best-Practice Benchmarking

Broadly, we analyze the effects of best-practice benchmarking by considering two aspects. First, setting aside incentive issues for the moment, best-practice benchmarking diffuses "best practice" across ILECs. If the practice judged best is indeed best, this is a desirable effect, and the more so, the greater the diversity in ILECs' initial practices or proposals. Second, we must consider incentive effects.

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[20] Id., paras. 13 and 38.

[21] Id., para. 38.

The incentive effects of best-practice benchmarking differ from those of average-practice benchmarking. Suppose that an ILEC knows that best-practice benchmarking will ultimately be applied, and that there is no reward for initially employing what turns out to be the "best" industry-wide practice and no sanction for initially using other practices. Then, although many complexities could arise, a first cut is that the ILEC's incentive would be the same as that of a single monopolist. The reason this is true, of course, is that any one ILEC's choice matters only if it turns out to be "best," in which case that choice will be applied to all ILECs, including the one who chose it. So, each ILEC has an incentive to select a practice as if its own choice will apply to it (even though, in fact, that may not happen). The prospect that this kind of best-practice benchmarking will be uniformly applied after all ILECs' choices are observed does not then affect each ILEC's incentives.[22]

Because the incentive effects are likely to be modest or unclear, if ILECs were identical, there would be no gain from best-practice benchmarking. However, experience shows that there is often considerable diversity among ILECs' choices.[23] These differences might result from differences in (a) strategy (e.g., one ILEC may seek early Section 271 approval whereas another

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[22] This analysis assumes that there is no reward to being the best nor punishment for not being the best, but simply a low-cost *ex post* dissemination of best practice. Obviously, other possibilities could be considered.

[23] Entrants seeking to purchase unbundled network elements from ILECs propose that regulators set detailed performance standards for maximum times for quotations and for delivery of service, cost-sharing arrangements, and similar service conditions. They frequently document a wide range of actual practices across large ILECs. For example, Northpoint Communications observes that some ILECs' requirements for ordering collocation require a CLEC to have state certification, and that these conditions delay collocation by a minimum of six months compared with other ILECs that have tariffed physical collocation. Northpoint also notes that obtaining collocation quotations from SBC in Texas required almost four months, whereas Ameritech provides quotes within 10 days. Similarly, charges for collocation-related services vary greatly across ILECs. For example, application fees range from $0 (Pacific Bell) to $7500 (Bell Atlantic North); cage construction charges vary from $10,000 (Georgia) to more than $100,000; power, heating and ventilation and installation charges vary from $2,000 to $12,000; and charges for OSS access vary from $0 (Florida) to $4700 per month (SWBT). Ex Parte, Letter from Steven Gorosh, Vice-President and General Counsel, Northpoint Communications, to Ms. Magalie Roman-Salas, Secretary, Federal Communications Commission (July 7, 1998), (transmitting attached document, *Proposed Remedies for Promoting DSL Competition*, on file with Federal Communications Commission in CC Docket Nos. 98-11, 98-26; 98-32; and 98-91.

seeks to maximize barriers to local competition), (b) demand structure, (c) previously established state regulatory requirements, or other factors. Whatever the source, it is clear that ILECs often make rather different choices from one another.

The next question then becomes whether the differences primarily reflect different efficient choices, or whether they reflect different degrees of candor or of cooperation, in addressing a fundamentally similar problem. If they reflect different efficient choices, it could be inappropriate to impose a "one-size-fits all" policy. If, however, the differences reflect different attitudes towards cooperation, then promulgating the "best" of the ILECs' initial choices throughout the industry is desirable (provided any costs of changing other ILECs' behavior are not too large). Moreover, given the complex and novel problems sometimes posed by interconnection requests, different responses may simply reflect different arbitrary choices.

Thus, in the case of number portability, the Commission found that the observed diversity was not a matter of different efficient choices, but rather that Ameritech's proposal could be taken as indicating that there was scope to implement LRN generally.

Recognition of the Value of Best-Practice Benchmarking

The value of best-practice benchmarks has been recognized by the Commission, the Department of Justice, competitors of the ILECs, and the ILECs themselves. In particular, the Commission has relied on the diversity of ILEC practices to determine the feasibility of regulatory standards and yardsticks for a wide variety of practices, as the following examples illustrate:

- *Technically feasible interconnection.* The Commission concluded that interconnection or access at a particular point in one LEC network is evidence of the

technical feasibility of providing the same or similar interconnection in another ILEC network.[24] Further, the Commission found that successful interconnection at a particular level of quality in one network is substantial evidence of the feasibility of interconnection at the same level of quality in another network.

- *Access to OSS functions.* The Commission found that ILEC competitors would be severely disadvantaged, if not precluded altogether, from fairly competing if they are unable to obtain the functions of pre-ordering, ordering, provisioning, maintenance and repair, and billing for network elements and resale services in substantially the same time and manner as the incumbent. The Commission observed that ILECs now provide IXCs with different types of electronic ordering and trouble interfaces, and that some ILECs are testing and operating interfaces for real-time access to OSS functions. These performance yardsticks enabled the Commission to conclude that providing nondiscriminatory access to OSS functions is technically feasible.[25]

- *Shared transport.* The Commission observed that Bell Atlantic, NYNEX, and PacTel offer shared transport in conjunction with unbundled local switching, and rejected Ameritech's objection that it was unable to measure and bill for shared transport.[26]

- *Open architecture.* In commenting favorably on a DOJ consultant's report, the Commission observed that "reliance on benchmarking also improved the

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[24] FCC 96-325, *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, First Report and Order, CC Docket No. 96-98, adopted August 1, 1996, released August 8, 1996, para. 204 (henceforth Local Competition Order).

[25] Local Competition Order, para. 518-520.

[26] FCC 97-295, *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996,* Third Order on Reconsideration and Further Notice of Proposed Rulemaking, adopted August 18, 1997, released August 18, 1997, para. 26, fn 77.

Commission's regulation of interconnection and monitoring of network performance."[27] That report[28] cited a plan by Ameritech to introduce a new type of "Feature Node Service Interface" interconnection at local switches which led the Commission in its Third Computer Inquiry proceeding to require other RBOCs to submit open-architecture proposals.

- *Trunk-side interconnection.* The Commission received an extensive cellular industry report on cellular interconnection and requested public comments on that report. Based on the information collected, the Commission concluded that trunk-side Type 2 interconnection is the most efficient method of interconnecting a cellular carrier's network to an ILEC's wireline network. Finding that some LECs had made Type 2 interconnection facilities available to cellular carriers, the Commission concluded that Type 2 interconnection was feasible. The Commission also found that, even if delays were incurred to lay cable or obtain equipment, a carrier should require no more than six months to provide Type 2 interconnection.[29]

- *Cageless collocation.* In the current Section 706 proceeding, the Commission observed that US West currently offers a cageless collocation arrangement. The Commission also noted that SBC permits CLECs to share collocation space instead of requiring each CLEC to occupy a dedicated cage. The Commission requested

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[27] FCC 97-286, *In the Applications of Nynex Corporation Transferor and Bell Atlantic Corporation Transferee, For Consent to Transfer Control of NYNEX Corporation and Its Subsidiaries,* Memorandum Opinion and Order, adopted August 14, 1997, released August 14, 1997, fn 175.

[28] Peter W. Huber, *The Geodesic Network: 1987 Report on Competition in the Telephone Industry*, 1987.

[29] 2 FCC Rcd 18, *In the Matter of The Need to Promote Competition and Efficient Use of Spectrum for Radio Common Carrier Services*, Declaratory Ruling, adopted April 30, 1987, released May 18, 1987, 2914 (paras. 31-33).

comments to determine whether such arrangements should be presumed to be technically feasible at other LEC premises.[30]

- *Operating expenses.* A Commission staff analysis of models submitted for use in estimating the costs of supplying universal service and unbundled network elements evaluated the input requirements of cost proxy models. The staff found that much of the variation in the models' estimates of the monthly cost of network elements is accounted for by differences in the treatment of operating expenses.[31] One approach suggested by the staff for improving the cost estimates is to use, as a yardstick for operating expenses, the minimum actual costs achieved by a sample of companies that report annually to the Commission.[32]

- *Line-of-business restrictions.* In support of its 1987 comments recommending elimination of the line-of-business restrictions, Ameritech provided an extensive summary of "the widespread and effective use of benchmark comparisons" since the divestiture established seven independent RBOCs.[33] It noted that in proceedings before the Department of Justice, the District Court, and the Commission, private-sector firms compared deployment and end-office conversion schedules, presubscription activities, ordering procedures, and rate levels for wholesale services,

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[30] FCC 98-188, *In the Matters of Deployment of Wireline Services Offering Advanced Telecommunications Capability*...Memorandum Opinion and Order, and Notice of Proposed Rulemaking, adopted August 6, 1998, released August 7, 1998, para. 139.

[31] J. Atkinson, C. Barnekov, D. Konuch, W. Sharkey, and B. Wimmer, *The Use of Computer Models for Estimating Forward-Looking Economic Costs: A Staff Analysis*, January 9, 1997, para. 64.

[32] Id., para. 68.

[33] A copy of Ameritech's summary is included as an attachment to this Declaration. Attachments to Ameritech's Comments on the Report and Recommendations of the United States Concerning the Line-of-Business Restrictions, March 13, 1987, Civil Action No. 82-0192.

among others. As one example, Ameritech observed that the Commission imposed on all RBOCs an allocation plan for routing of default traffic that was modeled after the practice proposed by a single company, Northwestern Bell, whereas all other RBOCs proposed routing the default traffic to AT&T.[34]

- *Equal access.* In evaluating RBOCs' compliance with the divestiture decree, the Department of Justice has tended to define regional company equal access obligations based upon the highest level of performance achieved by *any* of the regional companies. The DOJ compared and contrasted the equal access progress of the RBOCs on issues including: (1) availability of equal access; (2) conversion of conforming end offices; (3) cellular radio equal access; (4) equal access for 800 and 900 services; and (5) equal access from public telephones. For each issue, the DOJ used the highest level of performance achieved by an RBOC as a benchmark in assessing the progress of the others.[35]

- *Overhead costs.* The levels of overhead costs included in the rates for unbundled network elements, including collocation services, are of particular concern to carriers that must interconnect with ILECs. In a California Public Utilities Commission proceeding, Sprint recommended that a markup for overhead costs be limited to 15%. To reach this proposed standard, Sprint analyzed ARMIS data filed with the Commission and noted that two RBOCs consistently had markups less than 15%.[36]

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[34] Id., para. A-16.

[35] Report of the United States to the Court Concerning the Status of Equal Access (D.D.C.; Oct. 31, 1986).

[36] PUC of the State of California, R.93-04-003, I.93-04-002, Direct Testimony of David T. Rearden on Behalf of Sprint Communications Company L.P. on Pacific Bell UNE Pricing Issues, redacted version April 8, 1998, p. 10.

Best-Practice Benchmarking Abroad

Best-practice benchmark regulation is not limited to the United States. The European Commission has adopted a type of best-practice benchmark approach to assessing prices for access to public switched telecommunications networks and recommending maximum interconnection charges. The Commission established "best current practice" interconnection charges that are based on the three Member States with the lowest interconnection rates (the UK, France, and Denmark). The Commission's methodology establishes a benchmark range, with the low rate set somewhat below the lowest access price available. Starting January 1, 1999, the best current practice rate for local interconnection, for example, is the range 0.5 – 1.0 Eurocent (0.6 to 1.2 US cents) per minute (at peak rate). The interconnection benchmark rate will establish an incentive for national regulators in a number of countries to reduce high interconnection rates. As of May 1998, eleven of the fifteen Member States had local interconnection rates that exceeded the upper end of the benchmark range and in five of those states the rates were more than 80% above the upper benchmark value.[37] In the context of antitrust cases brought under the European Union's competition law, an interconnection price that is more than 100% above a best practice rate will be taken to signal a substantial likelihood of an abuse.

In the United Kingdom, the Director General of Water Services uses comparative information on water and sewerage companies in a variety of ways, but with particular emphasis on best practices.[38]

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[37] European Commission 98/511/EC, Recommendation Amending Recommendation 98/195/EC on Interconnection in a Liberalised Telecommunications Market (Part 1 – Interconnection Pricing), July 29, 1998.

[38] See the Monopolies and Mergers Commission's discussion of the Director General's comments, in its analysis of the proposed merger of Wessex Water Plc and South West Water Plc: Monopolies and Mergers Commission, *A report on the proposed merger*, October 1996, para. 2.70 (henceforth Monopolies and Mergers Commission).

C. "Heightened Scrutiny for Poor Performance" Benchmarking

A third form of benchmarking is the identification of problem cases. The Commission makes extensive use of comparative data that it collects from ILECs to assess the performance of individual companies in setting rates, delivering service of satisfactory quality, and enforcing existing regulatory standards. In its investigations, the Commission frequently relies on several years of data for each ILEC and buttresses preliminary findings concerning individual companies with comparisons across companies. In this way, the Commission is able to identify extremes of sub-standard performance. The Commission can require the poorly-performing ILEC to "catch up," impose regulatory sanctions or, at a minimum, instigate heightened regulatory scrutiny of the laggard ILEC. Not only does this potentially improve outcomes *ex post*, but the possibility that regulators may discipline sub-standard performance should improve ILECs' incentives *ex ante*. Again, absent multiple ILECs, the Commission would often lack the information to do any of these things with much confidence. Below we list the factors at issue.

- *Collocation*. The Commission has evaluated the reasonableness of LECs' charges for physical collocation services provided for interexchange access in terms of an industry-wide benchmark.[39] Collocation was a relatively new service for which little or no historical cost data and operating experience were available and for which LECs must make estimates of costs. For its statistical investigation, the Commission relied on direct cost estimates of 14 LECs[40] that offered collocation and had at least one

[39] FCC 97-208, *In the Matter of Local Exchange Carriers' Rates, Terms, and Conditions for Expanded Interconnection Through Physical Collocation for Special Access and Switched Transport*, Second Report and Order, CC Docket No. 93-162, released June 13, 1997.

[40] Pacific Bell, Nevada Bell, Southwestern Bell Telephone Company, Southwestern New England Telephone Company, Ameritech Operating Companies, New York Telephone and New England Telephone and Telegraph Company, BellSouth Telecommunications, Inc., US West Communications, Inc., GTE Telephone Operating

physical collocation customer. The Commission aggregated the LEC data for seven collocation functions: floor space, DC power, cross-connection and termination equipment, security installation, security escort, construction, and entrance facility. To minimize the impact of LEC estimation errors, it first excluded any cost estimate that exceeded the sample mean by more than two standard deviations (for that collocation function). The Commission then calculated the simple (unweighted) mean of the direct costs for each function and the sample standard deviation of the mean.

Deciding that it should recognize that some LECs may reasonably provide service somewhat less efficiently than other LECs, the Commission set the mean plus one estimated standard deviation as a maximum cost standard. Direct costs that exceed this value are disallowed, unless the LEC could justify the higher costs. The Commission used this methodology to ensure that the LECs' direct costs would fall within a "zone of reasonableness" and stated that the strict use of an average or median as the standard of reasonableness might not reflect the relative imprecision of the LECs' cost estimates for a new service.[41] In doing so, the Commission rejected a more lenient standard, observing that "all LECs have ample incentive to inflate the direct cost of physical collocation because these are the rates that they are imposing on the interconnector-customers against which the LECs compete in the interstate access market."[42] Thus, the Commission's procedure sets a benchmark for identifying poor

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Companies, Cincinnati Bell Telephone Companies, Lincoln Telephone and Telegraph Company, Rochester Telephone Corporation, and Central Telephone Companies.

[41] Id., para. 147.

[42] Id., para. 148.

performance that is based on both the average and the variance of industry-wide experience.

- *Overhead costs.* ILECs recover their common costs and costs of overhead activities by marking-up the direct costs of services. The Commission observed that assigning high overheads to the LEC facilities upon which interconnectors rely to provide competitive services, while assigning low overheads to services against which interconnectors seek to compete, is anticompetitive and that actions to raise rivals' costs through this mechanism can be profitable.[43] In its review of tariffs for virtual collocation, the Commission issued a detailed request for overheads and cost support data. Using the data submitted by the ILECs, the Common Carrier Bureau selected point-to-point DS1 and DS3 services as a yardstick to evaluate the overhead loadings assigned to virtual collocation services.[44] The Commission found that the LECs' loadings for DS1 and DS3 services varied widely, and observed that three RBOCs that used some of the highest overhead loadings also impose the highest total charges for virtual collocation services.[45] On the basis of this investigation, the Commission concluded that most of those LECs' virtual collocation rates were likely to be unreasonably high, and prescribed maximum permissible overhead loadings for virtual collocation services equal to the loadings for the comparable DS1 and DS3 services. By collecting comparative data on ILEC practices, the Commission was better able to detect and remedy potentially exclusionary conduct.

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[43] FCC DA-94-1421, Order, December 9, 1994, para. 23.

[44] Id., para. 17.

[45] The LECs proposed to assign generally high loadings to collocation charges while assigning low loadings to comparable services.

- *Non-primary lines.* In its Access Charge Reform Order[46] the Commission modified the method for recovering common line costs and instituted a new flat, per-line charge (the Presubscribed Interexchange Carrier Charge – PICC) assessed on the customer's presubscribed IXC. The new access charge regime requires LECs to distinguish between primary residential lines and non-primary residential lines. The rates for both the Subscriber Line Charge, which is paid by the end user, and the PICC are higher for non-primary residential lines. As a result, an ILEC with lower penetration of non-primary lines may be allowed to charge higher per-minute access fees.

The Commission investigated the penetration ratios for non-primary residential lines and found that several ILECs' reported penetration ratios were increasing over time, but that the penetration ratios of SNET (now part of SBC) were much lower than expected. As "an initial test of reasonableness" the Commission calculated the average penetration of non-primary (second) residential lines for all price-capped LECs. The Commission tentatively concluded that SNET had under-represented the number of non-primary residential lines and ordered SNET to document in detail the procedures and data used to estimate non-primary residential lines and to present evidence to justify its low penetration ratio.[47] SNET has contended that it should not be required to undertake further measurements until the Commission formally establishes a definition of non-primary residential lines in a current proceeding.[48]

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[46] FCC 97-158, *In the Matter of Access Charge Reform*, First Report and Order, CC Docket No. 96-262, adopted May 7, 1997, released May 16, 1997.

[47] FCC 98-104, *In the Matter of 1998 Annual Access Tarriff Filings, Southwestern Bell Telephone Company Revisions to Tarriff FCC No. 73.* Memorandum Opinion and Order, Order Designating Issues for Investigation, and Order on Reconsideration, CC Docket 98-104, adopted July 29, 1998, released on July 29, 1998, paras. 15-19.

[48] CC Docket 98-104, Direct Case of the Southern New England Telephone Company, *In the Matter of 1998 Annual Access Tariff Filings*, August 31, 1998.

> Surely, however, the availability of this kind of comparative information places the Commission in a much stronger position to defend consumers against the possibility that an ILEC understates the penetration of second lines.

Again, we note that U.S. telecommunications is not the only forum for such comparisons. For instance, the U.K.'s Director General of Water Services has promised stricter scrutiny for companies reporting relatively high costs.[49]

III. Effects of Mergers on Benchmarking

In this section we use the analysis and discussion above to assess the effects of mergers among large ILECs on the efficacy of benchmarking. The Commission has recently clearly recognized that a merger of two RBOCs weakens its ability to use benchmarking to regulate effectively:

> A reduction in the number of separately owned firms engaged in similar businesses will likely reduce this Commission's ability to identify, and therefore to contain, market power. One way that this can happen is by reducing the number of separately owned and operated carriers that can act as "benchmarks" for evaluating the conduct of other carriers or the industry as a whole.[50]

In this section we discuss the effects of ILEC mergers on the forms of benchmarking we have discussed above. We confirm that mergers can harm benchmarking – both through reducing available information even if ILECs do not change their substantive behavior, and also by worsening their incentives under benchmarking.

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[49] Office of Water Services (OFWAT), UK, *Setting Price Limits for Water and Sewerage Services: The Framework and Approach to the 1994 Periodic Review*. November 1993, p. 19.

[50] FCC 97-286, para. 147.

A. A Merger Reduces Information from Benchmarking Even When Behavior is Unchanged

Even ignoring incentive effects, if a merger leads to more aggregated reporting, valuable information is lost. In this sub-section we give a statistical formulation of this common-sense observation, intended to help analyze when it is likely to be important. After establishing the formulation, we discuss a rather stark best-practice example inspired by the number portability example above. Then we discuss effects on the use of average-practice benchmarking, both in terms of accuracy of the "average" as an estimate of an underlying parameter, and in terms of the effect of loss of observations on the confidence with which the Commission can wield this important tool. Finally, we note that these effects have been recognized elsewhere.

In many cases, after a phase-in period, the merged firm may adopt a common practice in such matters as pricing of services, availability of network components, and provisioning practices. Post-merger, only a single data point for these practices is then available for the two previously independent firms. In particular, useful financial information is likely to be reported at the firm level (aggregating across the merged operating companies). Even where the merged firm also reports company-by-company results, those values can be less useful than data from independent firms. Thus, the U.K.'s Monopolies and Mergers Commission (MMC), in considering the potential loss of independent observations through the merger of two water and sewerage companies, found that "the use of sub-company data is very much a second best ... first, that there are major cost allocation difficulties in the use of sub-company data and secondly, ... such data exhibit less variation and are hence less informative than they would be if they reflected the input of independent management."[51]

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[51] Monopolies and Mergers Commission, para. 2.76.

Our setting is the following: Each of n ILECs (prior to a merger) reports a statistic x_i, where $i = 1, \ldots, n$. Each x_i is drawn from a distribution with some parameter(s), say b, and thus contains information about b.[52] The Commission wishes to learn something about b, perhaps in order to set a performance standard. We note that because different errors in establishing a benchmark (setting too stringent a performance standard versus too lax a standard) often have asymmetric costs, the Commission should care not only about a posterior mean of b but also about measures of posterior dispersion (such as variance). In other words, as we remarked above in the concrete context of "ideal" price caps, (warranted) confidence in the benchmark is important.

We then ask: How does a merger that effectively aggregates some of the x_i before they are reported affect the Commission's ability to infer b from the information it receives? While there are cases in which such a merger has no effect (at this level of analysis), the conditions for such neutrality are stringent and unlikely to hold in many regulatory contexts.

A Best-Practice Example

Let us begin with an example in which one can see quite starkly how information can be lost in going to a single "merged" report based on what would otherwise have been independent observations x_1 and x_2. Consider once again number portability as an illustration of best-practice benchmarking. Here, a model that captures our (and perhaps the Commission's) thinking is that an unknown (to the Commission) parameter b is equal to 1 if LRN is reasonably implementable

[52] The analysis is simplest if the x_i are independent and identically distributed, but that is not necessary for the basic insights.

in the near future, and is equal to 0 if it is not. For each firm i the observation x_i is, with probability p, equal to b (which may of course be 0 or 1), and, with probability $1 - p$, equal to 0.[53]

Then, a sufficient statistic for b is the maximum of the x_i. An admissible (and sensible) decision rule is to require LRN implementation if and only if that maximum value is 1: this is best-practice benchmarking. If instead of independent reports, only a merged report $x_{1\&2}$ is available, the information on b is undamaged only in the special case where the merged report $x_{1\&2}$ is constructed so as to equal $max[x_1, x_2]$.

However, that is an unlikely form of aggregation. When, in fact, LRN is practicable, but only one of the merging partners wishes to offer it, it would be remarkable if the joint decision were always to offer LRN. A more reasonable hypothesis would be that when the partners have differing preferences it is equally likely that the merged firm would offer LRN or not. In our notation, if (say) $x_1 = 0$ and $x_2 = 1$, then $x_{1\&2}$ is equally likely to be 0 or 1. In that case, as with almost any aggregation rule, observing $x_{1\&2}$ is strictly less informative than observing both x_1 and x_2.

With this "equally-likely" aggregation rule, we can rather easily quantify the loss of useful information from such a merger. The key observation is that $x_{1\&2}$ has the same distribution as a single draw x_i. To see this, note that with the "equally likely" aggregation rule, the probability that $x_{1\&2} = 1$, conditional on $b = 1$, is given by $p^2 + 0.5[p(1-p) + (1-p)p] = p$.[54] Conveniently, in this formulation, from the point of view of best-practice benchmarking, the

[53] That is, with probability p firm i offers LRN, if indeed, it is practicable, and with probability $1-p$ it does not, even if it would be practicable.

[54] Pre-merger, the probability that at least one of these two firms would reveal the feasibility of LRN is $1 - (1 - p)^2$.

merged firm is just like one of the original firms: mathematically, the merger then is equivalent (from this point of view) to a simple reduction in n.

For example, if pre-merger n=8 and p=.125 (perhaps a natural value to look at if we think in terms of the number portability experience, where one firm out of eight voluntarily implemented LRN), the probability that LRN is made available is given by $1-(1-p)^n$. Substituting for p and n, we see that this probability is 0.66. Now, suppose that two of the eight firms merge. Then, the probability falls to $1-(1-p)^7 = 0.61$. Similarly, if the eight original firms are reduced to four through four mergers, the probability falls from 0.66 to $1-(1-p)^4 = 0.41$. These are substantial effects.

Effects of Merger in the Use of Averages

Next, consider the reduction in information due to merger as it affects the use of average-practice benchmarking. We develop two points. First, the best point estimate of the underlying parameter b – loosely, an "average" – may in fact depend on more than a simple weighted average of firms' reports, so that "the average" may be less accurately calculated after a merger. Second, losing information on variation among ILECs may rationally cause a loss of the confidence needed to use an average as a benchmark, and may make regulators or competitors more tentative in their use of such averages.

For a concrete example, we examine price-cap performance. We can view x_i as firm i's productivity performance, and model this performance as the sum of two terms – a "normally achievable" performance b, plus an idiosyncratic "error" e_i with mean zero. Thus, from the information point of view, the Commission is comfortable in applying the average-performance benchmark to firm i to the extent it believes that benchmark is a reasonably good estimate of what firm i is capable of achieving.

With standard assumptions, a consistent estimate of b is obtained simply by averaging the observations x_i. If the error terms are uncorrelated across firms and their variances are known and proportional to the squared sizes of the ILECs (where size is measured, say, by number of lines), then an efficient estimate of b is the size-weighted "sample mean" or average of the x_i.

In this special case, the "neutrality" result mentioned above holds: the estimate of b, and its statistical precision, are unaffected by a merger between firms 1 and 2 even if achieved productivity following a merger is reported only at the consolidated level. Intuitively, since the optimal use of all the x_i was merely to take the weighted average anyway, nothing has been lost if two observations were merged into a "within-group" weighted average before being reported.

But even modest changes in these assumptions bring us back to the fact that, in general, it is strictly more informative to observe all the diversity. For instance, consider the case where, as is the case for price caps, the covariance structure of the e_i cannot be taken as known and diagonal. Some unobserved effects in the error term may be common to several firms in a given year and other unobserved effects may persist for several years for a single firm. Because the covariance structure cannot be taken as known *a priori*, an efficient estimate of the performance *will not* use solely the weighted mean of the observations x_i.[55] The Commission's inferences about b will then be predictably less accurate if it has reliable access only to the weighted mean of x_1 and x_2 rather than to both of these variables. In other words, a merger hurts the process.

More generally, the Commission often lacks strong *a priori* knowledge of the variance with which the observations x_i are distributed around the unknown b. This is particularly likely in a *sui generis* proceeding as compared with one designed to measure recent changes in

[55] For example, generalized least squares estimation uses the observations x_i to estimate a covariance structure and thus to construct a more efficient estimate of the unknown parameter b.

productivity. Specifically, consider the standard Bayesian model in which the x_i are independent draws from a normal distribution with unknown mean b and unknown standard deviation σ, and in which the prior distribution of b and of $\log(\sigma)$ is the improper uniform.[56] The observer's point (posterior mean) estimate of b is the average of the x_i. As above, this is unaffected by the reporting only of average information. But nevertheless the posterior distribution of b depends on the separate observations x_i. Observing only pre-averaged data increases the posterior *variance* of b, because the observer has less information and thus must be less confident.

For example, suppose we begin with n=8. Then the posterior variance is given by[57] $[(n-1)/(n(n-3))]s^2$, an expression that depends on the sample variance s^2, but whose prior expectation is equal to $(7/40)\sigma^2$. Now if a series of mergers[58] reduces n to 4, we will have half as many observations, each of which is now normally distributed around the unknown b with (unknown) variance $\sigma^2/2$. The prior expectation of the posterior variance of b is now equal to $(3/4)\sigma^2/2 = (15/40)\sigma^2$. The result of this (semi-hypothetical) wave of ILEC mergers is that (in prior expectation) the posterior variance on b more than doubles. As a result, the Commission must be less confident in its estimate of industry performance and more circumspect in establishing any performance standard.

As this conclusion suggests, the Commission often wishes to make a rule but to be reasonably confident that it is not unduly harsh. In many problems, including price caps and

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[56] See, for instance, George G. Judge, R. Carter Hill, William E. Griffiths, Helmut Lütkepohl, and Tsoung-Chao Lee, *Introduction to the Theory and Practice of Econometrics*, 2nd Edition, 1988, p. 150.

[57] See Judge et al., p. 152.

[58] We make this version of the comparison to avoid the analytical complexity of having just one pre-averaged (paired) observation. However, we note that if the SBC/Ameritech and Bell Atlantic/GTE mergers were to take place, since the passage of the Telecommunications Act, the eight largest ILECs would in fact have been reduced to four.

universal service support, this can be formulated as a desire to set a performance standard y as demanding (say, as low) as possible but such that the probability that y is less than the unknown b is acceptably low. Statistically, this amounts to finding a confidence interval.

In most instances, the degree of variability will not be known in advance, and the Commission must generally rely on experience reported by the ILECs to arrive at a suitable confidence interval (in estimation terms) or band of tolerance (in behavioral terms). In this way, the data will be used for more than a point estimate of b.

An example that comes close to explicitly formulating the problem as the choice of a confidence interval is the FCC's proceeding on physical collocation. In this proceeding, which began in 1993, the Commission analyzed the cost estimates of 14 ILECs. The Commission had available different numbers of observations for the different collocation functions, depending on the types of facilities used by the companies.[59] The number of observations ranged from 12, for DS1 cross-connection and termination equipment, to just 3 for one type of security installation.

Four of the companies (Pacific Bell, Nevada Bell, Southwestern Bell, and SNET) are today part of SBC, and two others (Bell Atlantic and NYNEX) are merged into Bell Atlantic. If Ameritech and SBC merge, what was 14 will become 9; if, in addition, Bell Atlantic and GTE merge, the number drops to 8. If the Commission's calculations were repeated beginning from just 9 ILECs, the number of observations would decline to 8 for DS1 cross-connection and termination, and remain at 3 for the security installation. A merger of Bell Atlantic and GTE would further reduce the range for some collocation functions.

[59] And after removing very high cost estimates (those that exceeded the sample mean plus two sample standard deviations).

The reduced number of direct cost estimates increases the variability of the Commission's cost standard for a zone of reasonableness – the sample mean plus one sample standard deviation.[60] In a framework of Bayesian estimation of a parameter *b* and its distribution, the Commission must have reduced confidence that its mean-plus-one-standard-deviation interval actually covers the range of costs of efficient ILECs. To achieve the same degree of confidence with fewer observations, the Commission would have to increase the size of the interval. However, the Commission rejected such a lax interval.

As the number of ILEC observations is reduced by mergers, the Commission's power to constrain excessive pricing by this kind of benchmarking is weakened and the tools for setting bands of reasonable costs ultimately become ineffective. To make this point most starkly, consider an industry with just two firms, and suppose that the Commission were to stick to the "mean plus one standard deviation" standard. Let the two observations be x_1 and $x_2 \geq x_1$, so that the sample mean is $(x_1 + x_2)/2$, and the sample standard deviation is $\sqrt{2}\,(x_2-x_1)/2$. The Commission's zone of reasonableness, which allows everything up to one sample standard deviation above the sample mean, is now so large that even the maximum observation, x_2, is *certain* to be judged reasonable! In other words, the technique now has no bite whatsoever. The standard would have to be even more lax, if that were imaginable, if the Commission took account of the lower probability that a one-standard-deviation allowance would truly cover sampling variation because of the low numbers.[61]

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[60] We simulated the sample mean plus 1 sample standard deviation in repeated trials with 12 observations and then with 9 observations drawn from a normal population with mean and variance equal to the sample mean and sample variance for DS1 cross-connection and termination. We found that the reduced number of observations increased the standard deviation of the mean plus 1 standard deviation by 15.9%.

[61] With n=2 and independent normal errors, the classical probability that the sample mean plus 1 sample standard deviation exceeds the population mean is only 0.75. (75% of the standard *t* distribution with one degree of freedom

Regulators Recognize the Problem

In summary, we have seen how mergers reduce the flow of information for benchmarking purposes, even if we assume away all incentive effects of the merger. Indeed, this effect has been recognized both by the Commission and by others. For instance, the Commission has noted, "[m]ergers between incumbent LECs will likely reduce experimentation and diversity of viewpoints in the process of opening markets to competition."[62] Similarly, in the U. K., benchmark comparisons are used to compare the efficiency of monopoly water and sewerage companies operating in different geographic districts and to set company-specific price caps. The essential value of having comparative data from independent firms is recognized in the statutory requirements. Under the 1989 Water Act, the Monopolies and Mergers Commission (MMC) is required to take account of the loss of comparative information that would result from a merger of water companies.[63] The MMC recently examined a proposed merger between two water and sewerage companies and applied this standard.

Two studies submitted to the MMC provided estimates of likely losses due to (1) loss of the observation of a best-practice firm at some stage in the future, and (2) setting of less stringent price benchmarks because of greater uncertainty. The MMC noted that many other dimensions in which comparators are used in the comparative process had not been valued, and it recognized that individual companies also make particular contributions in specific comparative exercises. In summary, the MMC found that, although it was unable to quantify exactly the loss from removal of one firm (South West Water) from the comparative process, "we are satisfied that it

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lies below 1.) To define a zone of reasonableness that would have 90% probability of including the population mean one would have to allow variability of 3 standard deviations.

[62] FCC 97-286, para. 152.

[63] Water Industry Act, 1991, Part II, 34 (3).

would be a substantial one."[64] The MMC blocked the proposed merger that would have reduced the number of independent sewerage services companies from ten to nine. It found that "no remedy, even in the shape of very significant price reductions, would be sufficient to compensate for the loss of [South West Water Services] as a comparator."[65]

B. Unilateral Incentive Effects

A merger between firms with market power that compete in a product market has anticompetitive incentive effects that are well understood by competition authorities.[66] The "unilateral" effects stem from each merging party's new incentive to help, or not hurt, its new partner.

When two firms compete in a product market, each has opportunities to engage in behaviors that (i) are socially desirable, (ii) are profitable for that firm, (iii) reduce the profits of the other firm, and (iv) therefore are less likely to take place after a merger between the firms. In the case of product-market competition, "lowering price towards marginal cost" is the paradigmatic example of such behavior, although quality improvements, innovation, and other effects are also (and in some cases more) important. For this reason, antitrust authorities will challenge a merger between such firms if consumers lack adequate other alternatives, and if the change in incentives is likely to lead to significant worsenings of the firms' offers to consumers.

When two regulated, geographically-separated ILECs face competition-by-comparison through benchmark regulation, similar economic forces are at work. The socially desirable actions

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[64] Monopolies and Mergers Commission, para. 2.83, 2.85.

[65] Monopolies and Mergers Commission, para. 1.14; quoted in S.G.B. Cowan, "Competition in the Water Industry," *Oxford Review of Economic Policy*, Vol. 13, No. 1, Spring 1997, p. 85.

[66] U. S. Department of Justice and the Federal Trade Commission, *Horizontal Merger Guidelines*, April 2, 1992 (revised April 8, 1997).

to consider now include: (a) lowering recorded access costs, (b) introducing new services that raise the average revenue per line, (c) cooperating more fully with regulation and with the introduction of local competition, and (d) once ILECs are offering in-region long-distance service, cooperating in difficult-to-enforce ways with rival IXCs. In each case, each ILEC may sometimes be willing to take such actions, but in general such actions would hurt other ILECs. After a merger, the merger partners internalize those cross-effects and become less likely to take such actions. In addition, as Katz and Salop argue, a merged firm may have stronger incentives to deny competitive accommodations and engage in exclusionary conduct toward rivals than has either merger partner separately.[67] When reflected in discriminatory conduct, these incentives worsen the comparative information available and impair average-practice, best-practice, and other forms of benchmarking.

1. Unilateral Incentive Effects of Merger under Average-Practice Benchmarking

Average-practice benchmarking sets firms into a form of competition with one another even if they do not compete in any conventional product market. As John Vickers has expressed it, if two agents face a similar incentive scheme in which each agent's rewards are based both on its own and another's performance, the agents "are in competition in the sense that the reward of each partly depends on performance relative to that of the other agent."[68] The establishment of benchmarks thus creates "competition-by-comparison" between firms that do not directly compete with each other in the same geographic markets.

As one might expect from this observation, mergers between firms whose performance is regularly compared under benchmarking can have adverse unilateral incentive effects that are

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[67] Katz and Salop, Section VI.

[68] John Vickers, "Concepts of Competition," *Oxford Economic Papers*, January 1995, Vol. 47, No. 1, p. 10.

very similar to the corresponding anticompetitive effects of mergers among direct product-market competitors. Thus, consider the effect of a merger on the benchmark used for price-cap regulation. After the merger, each of the original firms will internalize the effect of its productivity improvements on its partner's profits. Compared to before the merger when the firms were competitors-by-comparison, this effect is a negative one.[69]

If (say) SBC lowers its recorded access costs, it is likely that the X-factor(s) set at a subsequent price cap performance review will be greater as a result. The increased X-factor will make Ameritech (as well as other price-cap ILECs) less well off. Post-merger, the incentive for the merged firm to reduce its costs in the former SBC's area will therefore be lower than the incentives SBC faced pre-merger. Symmetrically, Ameritech's incentive to increase efficiency also declines.

To continue the example used earlier, after a merger of two ILECs, each of which has 20% of the total access lines, a larger ILEC, with 40% of the access lines, keeps only 60% (i.e., 100% - 40%) of the cost reduction after the readjustment has taken effect. Thus, this larger ILEC's gross private present-value return per line becomes

$$\$(1 + .91 + .83 + .75) + .6*(.68 + .62 + .56 + \ldots..) = \$\ 7.99$$

so that this larger ILEC faces a "tax" of 27% (i.e., 7.99/11 = .73 = 1 - .27). The point is that a cost-reducing action by one of the original firms will reduce the access price that can be charged by its partner. The prospect that access charges will be adjusted in the light of the firm's own productivity experience creates a "tax" on the increased profits that each of the merged ILECs

[69] Although ILECs in different geographic areas are also suppliers of complements – each supplies originating access for calls terminating in the other's territory – this effect is surely small compared to the effects considered here.

realizes from investments that increase its productivity. As a result of the merger, the amount of "tax" increases because the effect on the merging partner is internalized.

We note that a simple comparison of these illustrative numbers – a 27% "tax" versus a 14% tax – may not fully convey to non-economists the difference in impacts. Economic logic tells us that the harm caused by a tax, or by a distortion of incentives away from the efficient level, is broadly proportional to the *square* of the distortion. Thus, a "tax" that is twice as large causes not twice as much, but approximately *four* times as much, economic loss.[70]

Clearly these numbers are illustrative, rather than precise, calculations. However, we believe that they correctly suggest that an increase in the share of nationwide lines controlled by a single company, such as would occur under the proposed SBC/Ameritech merger, substantially worsens the ratchet effect created by periodic revision of the X-factor. Under a system of benchmarking that uses industry-wide averages of cost performance, the larger the ILEC, the worse the ratchet effect.

Studies of the effect of corporate tax rates and tax credits on research and development spending suggest that R&D expenditures are relatively price-elastic with respect to tax rates.[71] This

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[70] This observation is a staple of economic analysis. Roughly, it can be explained as follows, for the simple case in which projects' gross returns are approximately uniformly distributed (at least in expectation). In expectation, a tax that is twice as large will discourage about twice as many efficient projects, because it puts twice as large a range "below the threshold." In addition, the average discouraged project is approximately twice as valuable in pre-tax (i.e., efficiency) terms.

[71] See, e.g., Bronwyn Hall, "R&D Tax Policy During the 1980s: Success or Failure?", *Tax Policy and the Economy* 7: 2-35, 1993; Philip Berger, "Tax Incentives for R&D: What Do the Data Tell Us?", *Council on Research and Technology*, Washington, photocopied, 1992; James Hines, "On the Sensitivity of R&D to Delicate Tax Changes: The Behavior of U.S. Multinationals in the 1980s," in Alberto Giovannini, Glenn Hubbard, and Joel Slemrod (eds.), *Studies in International Taxation* (University of Chicago Press: Chicago), 1993; Theofanis Mamuneas, and M. Ishaq Nadiri "Public R&D Policies and Cost Behavior of the U.S. Manufacturing Industries," *Journal of Public Economics* 63: 57-81, 1996.

effect makes it more likely that, as a result of a merger, the firms will allocate fewer resources to activities that would reduce costs but would also affect a benchmark.[72]

Finally, while a merger between SBC and Ameritech does not affect the immediate *incentives* of "third" ILECs (such as Bell South) under an average-performance scheme, there is nevertheless a plausible effect on their *actions*. In particular, Bell South may be less likely to trim its own excess costs if SBC and Ameritech face weakened incentives to trim theirs.[73] The net result can be expected to be a slower rate of productivity improvement throughout the industry, and consequent harm to consumers, as competition-by-comparison is weakened through merger.

The merger of SBC and Ameritech would also impair the effectiveness of average-practice benchmarking in the universal service support program, and for very similar reasons. To illustrate, suppose that SBC introduces new services that are valued by consumers, and thereby raises its average revenue per line. In due course, this will be reflected in a higher revenue-per-line benchmark for calculating high-cost support. As a result, carriers collecting high-cost support funds based on the difference between their estimated costs of serving high-cost areas and the benchmark revenue per line will receive less support. If SBC's merger partner, Ameritech, is such a carrier, post-merger SBC will internalize this effect and it will have less incentive to introduce such new services. In the same fashion, Ameritech will have a reduced incentive to introduce new revenue-increasing services because it will take into account the potential for reduced support that could flow to SBC in its high-cost service areas.

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[72] This effect must be set against any merger-specific economies of scale in innovation. We note, however, that because licensing of innovations among ILECs faces no obvious barriers, one might be suspicious of claims that such economies of scale are merger-specific.

[73] Although there is no first-order effect on Bell South's incentives to cut its costs, if it becomes richer and "fatter" (as it will if merging ILECs cut back on their cost-reduction), it may nevertheless (perhaps because of managerial principal-agent problems) experience cost inflation itself. See Michael Jensen, "Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers," *American Economic Review*, 76:2 (May, 1986), pp. 323-329.

2. Unilateral Incentive Effects of Merger under Best-Practice Benchmarking

A merger will similarly weaken the effectiveness of best-practice benchmarking because of the adverse (unilateral) *incentive* effects of taking a merger partner's interests into account. In our analysis of this problem, we distinguish two cases: (a) the merged firm sets a common practice for both partners, and (b) formerly independent (now merged) firms maintain two different practices. Although the analysis is somewhat different, the key themes and qualitative result – a loss of effectiveness for best-practice benchmarking – are the same in both cases.

When the merged firm sets a common practice, if firms' practices can be represented numerically (as with collocation charges or overhead rates), the common practice value of the merged firm is likely to lie strictly between the practices that the parties would have set separately absent the merger. As noted above, under best-practice benchmarking, only the best observation among all firms ultimately counts. Thus, either the merger makes no difference (because neither merging party would have provided that best observation), or the merger moves the firm with the best practice toward the other partner's preferences (because the best-practice firm now internalizes the effect on its partner). In the latter case the merger produces an undesirable change.

For example, suppose that Ameritech as a stand-alone RBOC would offer collocation charges of $X, an offer that turns out to be "best practice" among the ILECs, while SBC as a stand-alone entity would offer higher charges of $Y. In the absence of a merger, Ameritech's offer would be imposed as the benchmark, and SBC would be limited to charges of $X. Post-merger, decisionmakers for the merged company select a common charge for both partners that maximizes their total net benefit. As we noted above, one would expect this single policy to be set somewhere between the two pre-merger policies, $X and $Y, which implies that it would be higher than $X.

Consequently, post-merger the observed best practice is inferior to the best practice absent the merger.

In some cases, the merged firm will maintain different practices. In this case, too, there is an incentive to "shade" the previously independent choice in the direction of the less cooperative merger partner's preference. To illustrate this incentive, suppose that the Commission were to use a best-practice standard to establish maximum rates for collocation services and that each ILEC recognizes in advance that best-practice benchmarking is likely to be applied to collocation charges. Acting independently, each ILEC would offer collocation charges reflecting its own cost conditions and strategic goals, as well as other factors such as the intensity of state regulatory scrutiny.

However, if the firms merge, Ameritech's decision-makers would take into account that SBC's preferred charges are $Y and that the practice that Ameritech sets, $X, may be selected by the regulator as best-practice and applied to SBC as well. The decision-makers who maximize the joint profits of the merged companies, or even take SBC's preferences into account more weakly, would shade the offer of $X towards $Y – that is, the offered collocation rate would be higher. As a result, the benchmark charges would end up higher: either the shaded offer remains best practice, or another ILEC's offer, (by assumption higher than $X), is now best practice.

It is important to note that even if (in this example) Ameritech's influence brings SBC's preferred charge down from $Y towards $X, under best-practice benchmarking this reduction does not matter.[74] While a merger between an ILEC that (in a particular matter) is cooperative with new competitors and one that is intransigent may moderate the behavior of both, under best-

[74] Assuming, that is, that Y is not so "moderated" as to fall below X.

practice benchmarking it is only the merger's effect on the cooperative ILEC that affects the final result.

In summary, then, there is an adverse incentive effect of a merger when the merging firms' practices are compared by regulators and best practices are promoted. This is distinct from, although analogous to, the adverse incentive effect of the merger under average-practice benchmarking.

C. Coordinated Effects and Risk of Collusion

Recall from our discussion above that, under competition-by-comparison (as under product-market competition), each ILEC can undertake actions that are socially desirable and profitable but that harm the interests of other ILECs. A merger can increase the threat that a common understanding will develop (explicitly or implicitly) not to engage in such behavior. We believe that a substantial decrease in the number of relevant independent firms (and for some purposes only large ILECs may be relevant firms) can significantly increase this threat.

This, too, is not a novel point. Indeed, the Commission has observed that, although ILECs have a common interest in minimizing their cooperation with regulators and competitors who are seeking to open their local markets to competition, "On any particular issue, however, one incumbent LEC may have an incentive to cooperate with its competitors, contrary to the interests of other LECs," an incentive that may arise from regional differences between the ILECs.[75] The Commission rightly observed that if two major ILECs merge, the incentive for an individual ILEC to "break ranks" and cooperate with pro-competitive processes may be reduced. The number-portability example that we described earlier strikingly illustrates such a possibility.

[75] FCC 97-286, para. 154.

As in the product-market case, such parallelism is more likely the smaller the number of large ILECs. In large part, this is because of the diversity discussed above in the context of best-practice benchmarking. That is, with many ILECs, it is more likely that there will be one or two mavericks on any complex issue. With a large number of players, an ILEC contemplating aggressively cutting costs or boldly innovating will be less inclined to worry about offending the others by breaking an otherwise united front. By contrast, as the number of ILECs is reduced by merger, they become more likely to be able to coordinate their behavior and refrain from socially desirable actions. In this sub-section, we expand on this point.

As above, suppose first that each of n independent ILECs will, with probability p, take the socially desirable action. We next investigate the tradeoff between unilateral incentives to do so and coordinated incentives to maintain a united front. Suppose that an ILEC may, for its own reasons, prefer to take the socially desirable action in a matter at hand, but would also derive future value if a united position is maintained that would provide benefits in future regulatory matters. By hypothesis, if this ILEC goes along with the putative united front, it incurs some private cost c. This private cost, and even the fact that it is positive, are likely to be difficult for others to observe.

An ILEC in this position trades off c against the possibility that its action determines whether the united front – which it values at B – is maintained. (It may value this because of the prospect of preferring the united front on future matters, for instance.) Then this ILEC will reflect that, apart from its own action, with probability $q_n = (1-p)^{n-1}$ the front is united, so that its own action determines whether the united front is maintained. As a result, it will cooperate with the united front if, and only if, $q_n B > c$.

Observe now that the probability q_n is decreasing in n for a given value of p, so that q_n increases with a merger. Also recall that (under a reasonable symmetric model of how conflicts between merger partners are resolved) a merger can be modeled simply as a reduction in n. So, a merger will make it more likely that a united front is maintained, conditional on each ILEC's choice of p. This effect, which we discussed above in subsection III.A, has nothing to do with incentives (it holds p constant), but is purely a statistical (information) effect.

There is *also* an incentive effect, however. This is best seen in a Bayesian equilibrium of an incomplete-information game among the ILECs. Suppose for instance (plausibly enough) that each ILEC's value of maintaining a united front, B, and/or its value of c for a particular matter, are private information. Then this ILEC will maintain the united front if and only if, for its particular values, c/B is less than the perceived probability q_n that all others will maintain the united front. As a result, the probability that it chooses, instead, to be a maverick is $p(q_n)$, a decreasing best-response function.

Taking as given other ILECs' choices of p, any one individual ILEC's incentive to maintain the united front is increased by a merger. Because there is no point in playing on the team if others fail to do so, an increase in the perceived probability q_n that all others will do so – such as follows from a reduction in n holding p constant – therefore also makes each individual ILEC more inclined to go along with the (perhaps) united front and less inclined to be a maverick. Thus, the merger causes each ILEC's optimized p to fall, even if it takes others' values of p to be fixed (unaffected by the merger). Furthermore, if the ILEC recognizes this effect, it will know that others' values of p have, in fact, fallen, so that q is now even higher, further reinforcing its own incentive to reduce its p.

This analysis illustrates how a reduction in n can make maintenance of a united front more likely, both statistically, given each ILEC's p (as analyzed above), and also behaviorally, through the effect on p. Thus, a decrease in the number of firms through merger can increase the likelihood that the ILECs will achieve a united front inimical to cooperation with regulators and competitors.

D. Effects of Merger on "Purified" Benchmarks.

Yardstick competition can in principle eliminate the ratchet effect in average-performance benchmarking by setting a separate firm-specific benchmark for each firm. The Commission appears generally to have avoided this practice, possibly because of the difficulty of arguing persuasively that a common standard is being applied to all firms. Another problem is that, to the extent there are durable firm-specific effects or modest numbers of firms, as an estimate of what an individual firm is capable of achieving, a purified benchmark is statistically inefficient – although efficient in incentive terms.

Whatever the merits and defects of purified benchmarks, our goal here is to understand the effects of a merger among large ILECs. The primary effect of such a merger on purified benchmarking is that each merging ILEC's "target" or performance standard must become "noisier," because purified benchmarks impose the constraint that (for instance) Ameritech's performance receive zero weight in setting a target for SBC, and vice versa. Since it would be very unlikely absent the merger that no weight would be given to Ameritech's performance in setting an efficient purified benchmark for SBC, this is a loss.

This analysis applies when the regulator sets a very simple "average" purified benchmark. A related effect, however, applies to non-merging parties as well. That is, the ability to adjust a benchmark for firm-specific effects is impaired. "Where econometric analysis is needed before

comparisons can be drawn between companies with diverse operating environments, it is important that the number of separate observations relative to the number of explanatory variables that should be included in any model is sufficient."[76]

IV. Conclusion

Our discussion of the use of comparative and benchmark techniques by telecommunications regulators illustrates one of the important losses from mergers among large ILECs. We note again that not only regulators but also customers and suppliers of complements (such as IXCs), as well as nascent competitors, can and do compare ILECs against one another. The loss of one of a relative handful of large ILECs would substantially damage efficient regulation, including the interconnection regulation necessary for the growth of competition in local exchange and exchange access markets.

[76] Monopolies and Mergers Commission, para. 2.43.

THE BENEFITS OF BENCHMARKING AS RECOGNIZED IN MFJ PROCEEDINGS

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The Benefits Of Benchmarking As Recognized In MFJ Proceedings

The Federal Communications Commission has observed that the ability to make benchmark comparisons arising from the Bell System's formation of seven autonomous regional local exchange companies, in place of the monolithic pre-divestiture Bell System operating company structure, constitutes an "important regulatory tool" whose benefits have been recognized on numerous occasions since the MFJ was proposed and implemented.[1] During the course of various MFJ-related proceedings, the Commission, the Justice Department, and the Courts all acknowledged and relied upon the ability of regulators to employ benchmarking in a variety of contexts. In addition, the RBOCs themselves, in their own court filings, repeatedly emphasized the importance of the benchmarks created by the AT&T divestiture in enhancing the ability of the Commission and other regulatory authorities to detect and deter anticompetitive conduct.[2]

Even before the MFJ was approved and implemented, the Justice Department, in its Competitive Impact Statement, implicitly recognized the value of the ability to utilize a benchmark approach to enhance the effectiveness of regulation, noting that while the proposed consent decree did not mandate

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1 See In the Applications of NYNEX Corporation Transferor, and Bell Atlantic Corporation Transferee, for Consent to Transfer Control of NYNEX Corporation and Its Subsidiaries, Order, FCC 97-286, 12 FCC Rcd 19985 at ¶¶ 148-149 (1997).

2 Id. at ¶ 149.

consolidation of the BOCs into any particular number of entities, AT&T affiliates had indicated that there would be multiple entities, and further stating that "the Department will take into account, as appropriate, the potential impact of the proposed configuration of BOCs on the likelihood that the [MFJ's] non-discrimination requirements will, in fact, be achieved."[3]

While the District Court did not explicitly address the issue of benchmarking in its 1982 opinion approving the proposed AT&T consent decree, with certain modifications,[4] the Court specifically cited the ability to make such comparisons in rejecting the Justice Department's proposal to alter one of the Court's proposed modifications, i.e., the provision allowing the RBOCs to "provide, but not manufacture" all types of customer

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3 United States v. Western Elec. Co., 47 Fed. Reg. 7170, 7174-75 (Feb. 17, 1982) (United States Department of Justice, Competitive Impact Statement). Subsequently, in urging approval of the proposed GTE consent decree, the Department specifically cited the ability of regulators to utilize the divested BOCs as benchmarks against which to evaluate the conduct of the GTE operating companies ("GTOCs"), to ensure the GTOCs' compliance with the equal access standards included in the proposed decree. United States v. GTE Corp., 48 Fed. Reg. 46634, 46657 (October 13, 1983) (United States Department of Justice, Competitive Impact Statement).

4 United States v. AT&T, 552 F.Supp. 131 (D.D.C. 1982). In contrast, in his 1984 order approving the proposed GTE Consent Decree, Judge Greene noted that "GTE's implementation of equal access will be judged not only against the requirements of the decree, but also against two objective benchmarks: (1) the Bell Operating Companies' provision of equal access; and (2) the provision of equal access by the [GTOCs] in the cities not served by Sprint." United States v. GTE, 603 F.Supp. 730, 735 (D.D.C. 1984).

premises equipment.[5] In explaining its refusal to grant the Department's request to limit the BOCs to the provision of residential and single-line business CPE, the Court noted inter alia that concerns with regard to the potential for BOC discrimination in the installation and maintenance of CPE were alleviated by the fact that "claims of one Operating Company that it had particular difficulties or problems with the equipment of manufacturers it did not sell could be readily undermined by a comparison with the practices of the other six companies."[6] In a subsequent order, the District Court itself utilized the other six RBOCs as benchmarks in concluding that Pacific Bell's refusal to provide access to its lines for services originating from AT&T's coinless public telephones constituted a violation of the MFJ's equal access requirement, noting in its opinion that "[a]ll the Operating Companies except Pacific Bell appear to be providing the required access."[7]

In its 1987 Report to the District Court concerning the line of business restrictions imposed on the RBOCs under the MFJ, the Justice Department gave considerable weight to the

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5 United States v. AT&T Co., 1982-2 Trade Cas. (CCH) ¶ 64,980 at 73,150-73,151 (filed August 23, 1982) (D.D.C.).

6 Id. at n.8.

7 United States v. Western Elec., Inc., 583 F.Supp. 1257, 1258, n.4 (D.D.C. 1984). Elsewhere in its opinion, the Court observed that "Pacific Bell seems to be the only Operating Company to have taken the position that it need not grant access to AT&T unless and until ordered to do so by its state regulatory body." Id. at 1259, n.11.

conclusions reached by the Department's consultant, Dr. Peter Huber, concerning the value of benchmarks, specifically noting that "[Dr. Huber] believes that the existence of seven BOCs provides benchmarks that are likely to be useful to the regulators in identifying attempted abuses of the remaining bottleneck monopolies."[8] In his report, Dr. Huber found that reliance on benchmarking had improved the effectiveness of the Commission's regulation in the area of interconnection in particular, observing that:

> Benchmarking one LEC's performance against another in the post-divestiture marketplace has proved an effective regulatory tool. Laggard or eccentric LEC performance stands out when eight large holding companies [i.e., the seven RBOCs and GTE] line up for periodic regulatory inspection. . . .[9]

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8 Report and Recommendations of the United States Concerning the Line of Business Restrictions Imposed on the Bell Operating Companies by the Modification of Final Judgment ("DOJ Report and Recommendations") (filed February 2, 1987) at 44.

9 Peter W. Huber, The Geodesic Network: 1987 Report on Competition in the Telephone Industry, at 3.24 (1987). Elsewhere in his report, Dr. Huber observes that:

> . . . the FCC's ability to use one RHC's performance to benchmark another's makes regulatory oversight considerably easier than it once was . . . [I]f regulators themselves sometimes fail to spot network idiosyncrasies, adversely affected parties generally do not. . . .

Id. at 5.17.

Dr. Huber also cited the positive impact of benchmarks in other areas of regulation (e.g., cost allocation) as well.[10] In recommending elimination of the RBOC manufacturing prohibition, the Department cited "the emergence of multiple independent benchmarks for regulatory comparison of cost allocation and equipment purchase decisions" as one of two "major changes" which served to significantly reduce the potential for anticompetitive cross-subsidization.[11]

In its own filings with the Court in the MFJ Triennial Review proceedings, the Commission itself described the positive impact of the new benchmarks created by divestiture on its ability to constrain anticompetitive conduct by the BOCs. In its response to the Justice Department's Report and Recommendations, the Commission observed that:

> The divestiture itself makes it easier for the Commission to protect the competitive process. The creation of seven regional companies effectively established independent benchmarks for comparing BOC performance.[12]

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10 Id. at 3.54-3.55 and 6.39 (noting that "benchmark regulation can be used quite effectively to weed out idiosyncratic LEC tariffs and cost allocations -- which might otherwise be tailored to advantage the LEC-affiliated ISP.")

11 DOJ Report and Recommendation at 165.

12 Comments of the Federal Communications Commission as Amicus Curiae on the Report and Recommendations of the United States Concerning the Line of Business Restrictions Imposed on the Bell Operating Companies by the Modification of Final Judgment ("DOJ Report and Recommendations") (filed March 13, 1987) at 10.

The Commission went on to report that it had "been able to take advantage" of the benchmark approach to determine "minimum standards or maximum rates."[13] In a separate filing, the Commission again noted that "[a] critical difference between regulating a monolithic Bell System and overseeing independent, competitive BOCs is the ability to compare or 'benchmark' the actions of the separate companies."[14]

The RBOCs themselves -- including the parties to the transaction which is the subject of this application and other already completed and proposed mergers -- were particularly vociferous in emphasizing the benefits arising from their creation as seven independent entities, each of them available for regulators to use as "benchmarks" in their efforts to identify and constrain anticompetitive discrimination and cross-subsidy. Indeed, the comments filed by one of the parties to the instant application, Ameritech, in response to the Justice Department's Report and Recommendations, included a lengthy attachment cataloguing the "widespread and effective use of benchmark comparisons since 1982" by the FCC, the Justice Department, the Court, and the private sector "in ways that would

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13 Id.

14 Responsive Comments of the Federal Communications Commission As Amicus Curiae on the Report and Recommendations of the United States Concerning the Line of Business Restrictions Imposed on the Bell Operating Companies by the Modification of Final Judgment ("DOJ Report and Recommendations") (filed April 27, 1987) at 5.

have been inconceivable prior to divestiture."[15] In its comments to the Court, Ameritech asserted that the "division of the local exchange networks among seven independent companies has greatly enhanced the delectability of any monopoly abuse and the effectiveness of regulation," adding that "[t]he utility and effectiveness of such 'benchmark comparisons' among the regional companies is demonstrated by the extensive record of their actual use."[16] In a subsequent filing, Ameritech went on to argue that "[n]o amount of sophistry can suppress the importance of benchmarks," citing "overwhelming evidence that divestiture-created benchmarks are being used effectively by regulators, the

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15 Ameritech Comments on the Report and Recommendations of the United States Concerning the Line-of-Business Restrictions (filed March 13, 1987), Attachment A at A-2.

16 Id. at 10-11. Similarly, in the introduction to its extended description of the post-divestiture use of benchmark comparisons, Ameritech observed that:

> Today the seven regional companies and GTE operate local exchange networks of approximately the same size. The actions and decisions of any of these eight independent firms establish 'benchmarks' by which the actions and decisions of the other seven can be evaluated.
>
> The presence of benchmark comparisons makes competition more effective because customers can make more informed decisions. Equally important, the presence of benchmark comparisons permits regulators and others to evaluate the merits of an operating company's actions or decisions even in circumstances where direct competition is absent.

Ameritech Comments, Attachment A, at A-1.

Department and the industry as safeguards against any potential anticompetitive conduct or regulatory abuse."[17]

The other party to the merger which is the subject of this application, SBC, in its response to the DOJ's Report and Recommendations, also emphasized the importance of benchmarks, observing that:

> Perhaps the most profound change in the telecommunications industry since the announcement of the settlement that resulted in the MFJ is the existence of the seven RHCs as independent, publicly held companies. . . . The integrated Bell System was literally beyond comparison. Neither regulators, financial markets, nor the public had a benchmark against which the practices of AT&T could be measured.
>
> The creation of the seven RHCs completely changed those circumstances. The FCC can now monitor the rates, performances, and business practices of the seven RHCs to detect potential anticompetitive activities."[18]

In its comments to the Court, SBC further asserted that the existence of the seven RBOCs as benchmarks provides "an effective deterrent against even subtle attempts to abuse any advantages

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17 Ameritech's Response to Comments on the Report and Recommendations of the United States Concerning the Line-of-Business Restrictions (filed April 24, 1987) at 23; also see Ameritech's Reply to Responses to Comments on the Report and Recommendations of the United States Concerning the Line-of-Business Restrictions (filed May 22, 1987) at 3-7.

18 Comments of Southwestern Bell Corporation on the "Report and Recommendations of the United States Concerning Line of Business Restrictions (filed March 13, 1987) at i, 9-10.

that might arise from the ownership of local exchange telecommunications facilities."[19]

Comments submitted by another RBOC, Pacific Telesis (PacTel), which has since been merged into SBC, echoed the same theme, citing the "division of the Bell System into eight parts and the new ability of regulators to measure the BOCs against each other" as factors which have resulted in "an increased ability of regulatory agencies to identify and safeguard against improper discrimination and improper cross-subsidies."[20] Subsequent filings and expert testimony submitted by PacTel to the Court emphasized the ability of regulators to "use the other BOCs and GTE as benchmarks" in specific areas such as interconnection and procurement.[21]

The comments filed by other RBOCs which are not parties to the pending application included similar statements highlighting the benefits of having seven independent entities available to utilize as benchmarks. NYNEX, which is now subsumed within Bell Atlantic, noted in its comments to the Court that prior to divestiture "courts and regulators had practically no opportunity to develop 'benchmarks'" and observed that

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19 Id. at ii.

20 Comments of the Pacific Telesis Group in Support of the Recommendations of the United States (filed March 13, 1987) at 9-10.

21 Further Comments of Pacific Telesis Group, Pacific Bell, and Nevada Bell (filed April 27, 1987) at 75, 89, 95; also see Affidavit of Jerry A. Hausman at ¶¶ 26, 56, 60.

"[d]ivestiture changed all this" by establishing seven independent companies, thereby providing "[a] firm, constant and readily available basis . . . for comparing the actions of any one against the actions of another."[22] Similarly, BellSouth's response to comments on the DOJ Report and Recommendations noted that the existence of seven RBOCs will "facilitate the detection of questionable competitive practices by allowing each BOC to serve as a benchmark for the others."[23] In its comments to the Court, U S WEST asserted that concerns with regard to the potential for anticompetitive cross-subsidies and discrimination in favor of RBOC-affiliated interexchange operations were unfounded, noting that "each of the other RHCs would provide a check or benchmark for the conduct of any one of them."[24] In this respect, U S WEST observed, "the effectiveness of federal

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22 Response of NYNEX Corporation to the Comments filed on the Report and Recommendations of the Department of Justice (filed April 27, 1987) at 22-23.

23 BellSouth Response to Comments on the Justice Department Recommendations and Memorandum in Support of Motion for Relief from Section II(D) of the Modification of Final Judgment (filed April 27, 1987) at 16; also see Comments of BellSouth Corporation on the Justice Department Recommendations Concerning Section II(D) of the Modification of Final Judgment (filed March 13, 1987) at 22, noting that "[s]ince there are now seven Regional Holding Companies, regulators can and do compare the activities of all so that the practices of any BOC manufacturing affiliate can be used as a benchmark to detect undesirable conduct by other BOCs."

24 Memorandum for U S WEST, Inc. Presenting Points and Authorities in Support of Its Motion for Relief from Line of Business Restrictions Imposed by Section II(D) of the Modification of Final Judgment and Responding to Comments, (filed April 27, 1987) at 147.

and state regulatory agencies has been significantly enhanced by divestiture."[25]

Affidavits submitted by the RBOCs in connection with their joint request for removal of the MFJ information services restriction, filed in the proceedings which followed the 1990 Court of Appeals' decision remanding this issue to the District Court, also emphasized the importance and effectiveness of the benchmarks created as a result of the AT&T divestiture. In one such Affidavit, for example, Professors Kenneth J. Arrow and Andrew M. Rosenfield observed that "[d]ivestiture also has made effective regulation easier by helping regulators evaluate and control the conduct of the RBOCs through the use of 'benchmarks,'" and noted that "the use of such benchmarks has already become standard practice at the Antitrust Division, the FCC and state public utility commissions."[26] In their affidavit, Messrs. Arrow and Rosenfield went on to assert that "[t]he availability of benchmarks greatly increases the probability that any attempt to discriminate in the provision of regulated service

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25 Id.

26 Reply Memorandum of the Bell Companies in Support of Section VII Motions for Removal of the Section II(D)(1) Restriction on the Provision of Information Services, Reply Affidavit of Kenneth J. Arrow and Andrew M. Rosenfield, ¶ 43, citing the use of benchmarks by regulators "in evaluating compliance with equal access requirements and in comparing installation and maintenance practices for CPE."

to information service competitors would be detected and defeated quickly."[27]

In its initial 1987 ruling in the MFJ Triennial Review proceeding, the District Court acknowledged the RBOCs' argument that, in contrast to the situation that existed prior to divestiture, "now . . . benchmarks exist by which the performance of one of them can be measured against that of the six others."[28] However, the Court rejected the notion that this fact constituted a sufficient "changed circumstance" to justify modification of the MFJ line of business restrictions, observing that "the possibility of the existence of benchmarks was necessarily included in the decree assumption which imposed the restrictions upon the several successors of the Bell System."[29] The Court also found that the RBOCs could take individual and collective

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27 Id.; also see Affidavit of Sanford J. Grossman, ¶ 28 ("divestiture has also increased the likelihood of detection by allowing regulators and competitors of the BOCs to compare one BOC to the other," and accordingly it is "very unlikely, as an institutional matter, that a BOC or its managers would undertake anticompetitive actions now"), and Reply Affidavit of Dennis W. Carlton and George J. Stigler, ¶¶ 44-45 (citing the AT&T divestiture and the existence of seven RBOCs as having "improved significantly the ability of regulators, antitrust authorities and rivals to detect and defeat attempts to behave anticompetitively").

28 United States v. Western Elec. Co., 673 F.Supp. 525, 547 (D.D.C. 1987).

29 Id.

action of various sorts to prevent the successful use of a benchmarking approach.[30]

The D.C. Circuit, in its 1990 Order resolving RBOC appeals of the District Court's ruling, agreed that "as the District Court noted, the mere existence of seven BOCs in place of the prior unified Bell System is not by itself a significant factor" sufficient to justify a modification of the decree.[31] The Court of Appeals concluded, however, that it was appropriate to consider "the asserted existence of 'benchmarks' for comparing BOC performance" in determining whether the standard for removal of the line of business restrictions established in Section VIII(C) was met.[32] In its opinion, the Court of Appeals noted that "[a]ccording to appellants and the FCC, these benchmarks would make it far easier to regulate the BOCs than the old Bell System if the BOCs were permitted to enter other markets," but found that "the district court still legitimately

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30 In its opinion, the Court noted that "the Regional Companies are free, by virtue of the regulations proposed by the FCC, to adopt entirely dissimilar accounting and other procedures, making impossible intelligent benchmark comparisons between and among them." Id. at 547-548. In addition, the Court observed, "the Regional Companies are, of course, quite capable of cooperating with each other, if necessary, to defeat any benchmark-type comparison scheme." Id. at 548, n. 97.

31 United States v. Western Elec. Co., 900 F.2d 283, 299 (D.C. Cir. 1990).

32 Id.

imposes on the petitioning BOCs the burden of making the requisite showing."[33]

In considering whether the District Court's refusal to lift the MFJ manufacturing restriction was justified, the Court of Appeals observed that "while the risk of cross-subsidization cannot be eliminated completely, FCC regulation -- especially the availability of benchmarks to enforce effective accounting rules -- would 'significantly mitigate' it."[34] Ultimately, of course, the Court of Appeals affirmed Judge Greene's decision maintaining the MFJ interexchange and manufacturing restrictions, but reversed and remanded the District Court's determination that the information services restriction should be modified, but not eliminated.[35]

Subsequently, in its 1993 opinion affirming the District Court's decision on remand removing the information services restriction, the D.C. Circuit found that the existence of the seven RBOCs and the resulting use of benchmark comparisons had in fact materially enhanced the effectiveness of regulators, concluding that:

> There is a lot of evidence that the break-up and other recent developments have enhanced regulatory capability. . . . [T]he existence of seven [R]BOCs increases the number of

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33 Id.

34 Id. at 302.

35 Id. at 311.

> benchmarks that can be used by regulators to detect discriminatory pricing. . . . Indeed, federal and state regulators have in fact used such benchmarks in evaluating compliance with equal access requirements . . . and in comparing installation and maintenance practices for customer premises equipment.[36]

On the basis of its finding that the availability and use of benchmarks had enhanced the ability of regulators to constrain anticompetitive conduct by the RBOCs and other factors, the Court of Appeals determined that removal of the MFJ information services restriction was appropriate.[37]

Following the Court of Appeals' ruling, the RBOCs renewed their efforts to secure removal of the remaining MFJ line of business restrictions, and in July 1994, four of the RBOCs, including SBC, filed a Motion to Vacate the Decree.[38] In their supporting memorandum, the RBOCs again cited their existence as seven independent entities, available for regulators to use as benchmarks, as a significant factor supporting removal of the MFJ interLATA and manufacturing line of business restrictions, stating that:

> The story is quite different today. To some extent, the Decree itself is responsible for

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36 United States v. Western Elec. Co., 993 F.2d 1572, 1580 (D.C. Cir. 1993), cert. denied 126 L.Ed. 2d 438 (1993), citing the Arrow/Rosenfield, Grossman, and Carlton/Stigler affidavits described above, supra n.26-27.

37 Id. at 1582.

38 Motion of Bell Atlantic Corporation, BellSouth Corporation, NYNEX Corporation and Southwestern Bell Corporation to Vacate the Decree (filed July 6, 1994).

> making regulation effective. As the Court of Appeals has explained, '[t]he seven independent BOCs are not the old AT&T'. . . . Each BOC serves as a benchmark against which the Commission can measure the performance and behavior of the next; such comparisons were quite impossible before divestiture.[39]

The RBOC's memorandum went on to note that "[t]he FCC also uses an automated system known as ARMIS to track BOC accounts over time and to compare the accounts of different BOCs, giving it 'unprecedented capability' to exploit the 'benchmarking' possibilities created by divestiture."[40]

In addition, a number of the affidavits submitted in conjunction with the RBOCs' motion emphasized the enhanced ability of regulators to utilize benchmark comparisons between and among the seven RBOCs and GTE to more effectively constrain the potential for discrimination and cross-subsidization in various areas, e.g., interconnection/access, procurement. The joint affidavit submitted by former Commissioner Henry Rivera and two former FCC Common Carrier Bureau Chiefs, for example, asserted that:

> Detection of interconnection problems today is easier than in the past as the result of two related developments. First, the break-up of the Bell System has produced numerous,

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39 Memorandum of Bell Atlantic Corporation, BellSouth Corporation, NYNEX Corporation, and Southwestern Bell Corporation in Support of Their Motion to Vacate the Decree (filed July 6, 1994) at 29-30.

40 Id. at 35, citing Affidavit of James E. Farmer at ¶¶ 29, 31 and Affidavit of Henry Rivera, Richard Firestone, and Albert Halprin at ¶¶ 80-81.

> similarly situated regional companies. Each of these companies' performance can be used as a benchmark for the rest. Although these comparisons alone cannot conclusively resolve whether discrimination has occurred -- each region is different because each has different network configurations and a different mix of equipment -- the Commission has used these benchmarks with great success, comparing BOC ONA plans and CEI proposals for such services as audiotex, protocol conversion, voice mail, electronic mail, remote monitoring, and computer storage. This is precisely the opposite of the situation confronted by the Commission before the Decree, when the Bell Companies were all part of a single integrated entity.
>
> Second, the creation of numerous competing telecommunications companies has created a whole new class of sophisticated and aggressive whistleblowers. . . . [L]ike the FCC itself, these companies often will deal with several BOCs; as a result, they are able to detect discrimination by comparing the behavior and performance of each of the companies with which they deal.[41]

The affidavit submitted by Professor Gary S. Becker in conjunction with the RBOCs' motion also emphasized the value of benchmarking, in the areas of access and procurement, observing that:

> Even provision of interLATA services to within-region customers raises fewer risks of discrimination against competitors than it did a decade ago. Whether local exchange companies provide equal access is now routinely monitored by regulators. Also, service providers that require local exchange access, such as those offering long distance and information services, can readily compare the quality and price of access provided by

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41 Affidavit of Henry Rivera, Richard Firestone, and Albert Halprin, at ¶¶ 58-60.

> other LECs in determining whether they are subjected to discrimination. . . .
>
> Even RBOC manufacture of equipment that does or can interconnect with its local network raises fewer competitive concerns than at the time the decree was entered. If the prohibition on manufacturing were eliminated, regulators would be helped in detecting discrimination against unaffiliated equipment providers by analyzing equipment purchasing patterns of the integrated RBOCs (and customers in their regions) against a variety of other benchmarks including the other RBOCs and other large LECs such as GTE.[42]

Similarly, the affidavit submitted by Professors Arrow and Carlton noted that "[i]f the equipment manufacturing ban is removed, regulators would still be able to compare the purchasing practices of any of the RBOCs against those of the six other RBOC benchmarks as well as GTE and other large local exchange providers," and asserted that "[t]his environment facilitates detection of attempts to discriminate against unaffiliated suppliers."[43]

On April 11, 1996, the District Court issued an order terminating the MFJ effective as of February 8, 1996, the date on which the Telecommunications Act of 1996 was signed into law.[44] Pursuant to the Court's Order, all pending motions were dismissed as moot.[45] Accordingly, there was no judicial determination as

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42 Affidavit of Gary S. Becker, ¶¶ 15, 17.

43 Affidavit of Kenneth J. Arrow and Dennis W. Carlton, ¶ 26.

44 United States v. Western Elec. Co., 1996-1 Trade Cas. (CCH) ¶ 71,364 at 76,837 (April 11, 1996) (D.D.C.).

45 Id.

to the merits of the arguments advanced in support of the RBOCs' Motion to Vacate the Decree.

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA,	)	
	)	
Plaintiff,	)	
	)	
v.	)	Civil Action No. 82-0192
	)	
WESTERN ELECTRIC COMPANY, INC. and AMERICAN TELEPHONE AND TELEGRAPH COMPANY,	)	
	)	
Defendants.	)	

ATTACHMENTS
TO
AMERITECH'S COMMENTS ON THE REPORT AND RECOMMENDATIONS OF THE UNITED STATES
CONCERNING THE LINE-OF-BUSINESS RESTRICTIONS

March 13, 1987

Attachment A

BENCHMARK COMPARISONS

Divestiture has created the conditions for effective monitoring of the nation's telephone operating companies by customers, competitors, the Department of Justice, the Court and others and for effective regulation by the Federal Communications Commission. Today, the seven regional companies and GTE operate local exchange networks of approximately the same size. The actions and decisions of any of these eight independent firms establish "benchmarks" by which the actions and decisions of the other seven can be evaluated.

The presence of benchmark comparisons makes competition more effective because customers can make more informed decisions. Equally important, the presence of benchmark comparisons permits regulators and others to evaluate the merits of an operating company's actions or decisions even in circumstances where direct competition is absent. Since divestiture, the regional companies have faced both burgeoning competition and a proliferation of benchmarks affecting nearly everything they do. The upshot is that the regional companies live under a spotlight that may be unique in the business community.

The use of benchmark comparisons has become a standard practice of the regional companies' customers and competitors, as well as the FCC and the Department of Justice. Benchmark comparisons are used on large items and small items. They are used on

questions ranging from costs and profits, to network scheduling, to technical feasibility -- in short, wherever a regional company's decisions materially affect a competing economic interest group. This Attachment illustrates the widespread and effective use of benchmark comparisons since 1982, in ways that would have been inconceivable prior to divestiture.

I. USE OF BENCHMARK COMPARISONS BY THE PRIVATE SECTOR

The private sector -- including carriers, customers and others -- has often used benchmark comparisons in proceedings before the Department of Justice, the Court, and the Federal Communications Commission:

A. Use of Benchmark Comparisons before the Department of Justice and the Court.

o In its August 6, 1984 Comments on the regional companies' equal access compliance plans, AT&T made the following comparative assessments of those plans:

- Contrasting the NYNEX, Ameritech, Southwestern Bell and Northwestern Bell plans for terminating equal access with the silence of the other regional companies. (AT&T Comments at 6).

- Comparing equal access conversion schedules. (Id. at A-2).

- Contrasting the BellSouth, U.S. West and NYNEX plans to provide customer presubscription lists with the silence of the other regional companies. (Id. at A-6).

- Contrasting the willingness of Ameritech, Pacific Bell and Southwestern Bell to provide Maintenance Limit data with the silence of the other regional companies. (Id. at A-9).

- In its August 21, 1984 Comments on the regional companies' compliance plans, MCI made the following comparative assessments:

  - Comparing access tandem deployment schedules. (MCI Comments at 3-5).

  - Comparing end office conversion schedules. (Id. at 5-9).

  - Comparing access ordering requirements. (Id. at 10).

  - Comparing availability of toll usage data. (Id. at 14).

  - Comparing the Bell Atlantic, Pacific Telesis and Pacific Northwest Bell plans for allocation of access capacity. (Id. at 16-19).

  - Comparing presubscription procedures and reports. (Id. at 23-31).

  - Comparing plans for calling card services and directory assistance. (Id. at 35).

  - Comparing plans for switched access from public telephones. (Id. at 36).

  - Contrasting Ameritech's inclusion of various equal access information in its compliance plans with the omission of that information by the other regional companies. (Id., Exhibit 4).

- In its August 17, 1984 Comments on the regional companies' compliance plans, Satellite Business Systems made the following comparative assessments:

  - Contrasting Ameritech's commitment to deploy access tandems rapidly with other companies' plans for direct trunking. (SBS Comments at 7).

  - "Southwestern Bell appears to have responded most completely of all the BOCs to the [transmission quality] information requests

presented by the Department . . ." (Id. at 16).

- Comparing presubscription procedures and reports. (Id. at 27-42).

- Contrasting the plans of NYNEX, Southwestern Bell and Pacific Bell for calling card services with the silence of the other regional companies). (Id. at 44).

o In its August 6, 1984 Comments on the regional companies' compliance plans, GTE Sprint made the following comparative assessments:

- Contrasting Northwest Bell's plans to allocate undesignated traffic with other companies' default of that traffic to AT&T. (GTE Sprint Comments at 6).

- Comparing availability of customer lists. (Id. at 7-9).

- Comparing plans for access tandem deployment. (Id. at 24).

o In its May 10, 1985 letter from Michael Salsbury to Kevin Sullivan at the Department, MCI compared the presubscription activities of each of the regional companies with respect to four issues:

1) Presubscription order confirmation;

2) Conflict resolution;

3) Notification of new customers; and

4) Notification of installation timeliness.

For example, MCI contrasted the presubscription conflict procedures (which have since been standardized through FCC directives) of Ameritech, NYNEX, and Pacific Bell. Letter at 8 n.8.

- In its Report To The Department of Justice on RBOC Compliance With Equal Access (Aug. 16, 1985), MCI made numerous comparisons among the regional companies' presubscription procedures and reports, including:

  - Comparing regional company presubscription confirmations, customer information, billing practices and report formats. (Report Sec. II at 4-5).

  - Comparing automated versus manual input of presubscription orders into switches. (Id. at 6).

  - Comparing schedules for presubscription implementation. (Id., Sec. III at 2 n.2).

  - Comparing presubscription report formats. (Id. at 3 n.3, 5 n.5).

  - Comparing methods of resolving presubscription conflicts. (Id. at 10 n.20).

  - Comparing charges for certain presubscription reports. (Id. at 11 n.20, 21).

  - Comparing Bell Atlantic and Ameritech positions on verification of presubscription orders. (Id. at 15 n.31).

- In arguing its position concerning its February, 1986 requests for equal access at approximately 1400 regional company end offices, MCI made extensive comparisons with respect to those companies' equal access conversion schedules, procedures, and responses to the February, 1986 MCI requests. MCI's Objections To The RBOCs' August 1 Filings Concerning Bona Fide Requests For Equal Access Conversions (D.D.C.; Aug. 15, 1986).

B. Use Of Benchmarks Comparisons Before The Federal Communications Commission

Allocation Plan

- MCI compared Ameritech's proposed Allocation Order conflict resolution plan to BellSouth's plan. MCI concluded and argued to the Commission that Ameritech's proposal should be allowed, while BellSouth's proposal should be denied. Reply of MCI to Petition of Ameritech and BellSouth, Investigation of Access and Divestiture Related Tariffs, CC Docket No. 83-1145, Phase I (filed Sept. 26, 1985).

Bidirectional WATS

- MCI Telecommunications Corp. commented that "[i]n contrast to the behavior of the other LECs," Ameritech promptly provided MCI with unblocked, unscreened, two-way WATS access lines. MCI commended Ameritech's efforts, particularly in light of the fact that other LECs have the same switching equipment as Ameritech. "Ameritech's efforts lay in stark contrast to the promised slow deliveries of the other LECs." Reply of MCI Telecommunications Corp., Mid-Year 1986 Access Tariff Filings at 2-3 n.4 (filed July 25, 1986).

Equal Access

- In its reply comments, Lexitel Corp. presented a chart comparing all operating companies' order verification

reports. Lexitel analyzed the operating companies' performance data and concluded that some operating companies performed better than others. Accordingly, Lexitel argued that the Commission needed to define equal access and establish availability requirements. Establishment of a Comprehensive Definition of "Equal Access" to Local Exchange Facilities to Ensure Equal Opportunities for Competitive Provision of InterLATA Telecommunications Services, RM No. 5196 (filed Dec. 5, 1985).

Generic Rate of Return Formula

o In its July 3, 1986 reply brief in Authorized Rates of Return for the Interstate Services of AT&T Communications and Exchange Telephone Carriers, CC Docket No. 84-800, Phase III, GTE argued its position on interstate access rate of return methodologies by presenting data to the Commission that compared the following:

- The regional companies' capital structure components. (Exhibit 3).
- The regional companies' rates of return on common equity and rate base. (Exhibit 4).
- The regional companies' adjusted Commission quarterly DCF calculations. (Exhibit 5).

Rate Levels

- MCI made numerous comparisons of operating companies in its January 7, 1985 Comments And Petition To Reject, Or, In The Alternative, To Suspend And Investigate, Investigation Of Access And Divestiture Related Tariffs, CC Docket No. 83-1145, Phase I and Phase II, Part I, Trans. No. 31. MCI's comments included comparative charts on the following:

  - Intrastate private line rates for NECA and Non-NECA BOCs. (Tables 2 and 3).
  - Special access rates for Digital Data Service. (Table 5).
  - Special access rates between carriers for voice grade service. (Table 4).
  - Special access investment per circuit. (Table 6).
  - Special access demand data. (Table 7).
  - Forecast number of access connections and special access lines. (Table 8).
  - Major unit investments used to allocate revenue requirements to rate elements. (Table 9).

- In its November 22, 1983 comments on the Investigation of Access and Divestiture Related Tariffs, Phase I, CC Docket No. 83-1145, Western Union Telegraph Co. presented tables to demonstrate local carriers' rate increases. Specifically, the tables compared rates for identical two-wire voice-grade facilities within various mileage, transport and exchange/wire center categories. (Tables 12 to 15). Western Union also compared the 1978 Bell System rates to the 1982 separate

rates and the proposed special access rates. (Tables 16 to 23).

- AT&T used an operating company comparison to demonstrate three rate alternatives to the Commission. AT&T's Application for Review, Investigation of Access and Divestiture Related Tariffs, Phase I, CC Docket No. 83-1145 at 21 (filed June 26, 1984).
- AT&T included a comparison of various operating companies' special access monthly charges for three-mile voice-grade facilities in its discussion of interim special access tariff arrangements as opposed to Docket 20099 tariff arrangements. Brief of Intervenor AT&T, The Western Union Telegraph Co. v. FCC, Nos. 84-1177, 84-1641, 84-1642, 85-1115, 85-1124, 85-1148, 85-1151, 85-1183, 85-1204, 85-1300 at 12 n.24 (filed June 27, 1986).1/

II. USE OF BENCHMARK COMPARISONS BY THE DEPARTMENT OF JUSTICE

The Department has made extensive use of benchmark comparisons in defining decree obligations and in monitoring compliance with those obligations. With respect to equal access, the Department has compared each regional company's practices,

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1/ See also AT&T's Application for Review, Investigation of Access and Divestiture Related Tariffs, Phase I, CC Docket No. 83-1145 at 3 (filed June 26, 1984).

procedures, schedules and positions with those of the other regional companies. The Department has tended to define regional company equal access obligations based upon the highest level of performance achieved by <u>any</u> of the regional companies. For example:

- The Department reviewed the revised conversion schedules and other responsive materials from each of the regional companies concerning MCI's February, 1986 requests for equal access at approximately 1400 end offices.2/ Based upon the schedules of some of the regional companies, the Department concluded that a 24-month interval between receipt of a bona fide request and conversion is prima facie reasonable for conversion of nonconforming offices. In comparing the different regional companies' conversion schedules, the Department observed that the regional companies "that propose substantially to complete their conversions within 24 months from the request . . . provide a 'yardstick' to which the more extended schedules must be compared to

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2/ <u>See</u>, <u>e</u>.<u>g</u>., Memorandum of Ameritech On Its Equal Access Performance and the accompanying Affidavits of Gerald I. Malik and Joseph F. Luby (July 31, 1986), and Ameritech's Reply To The MCI, AT&T And Sprint Responses To Its Revised Equal Access Schedule, which was supported by the Supplemental Affidavits of William B. Wells, Harry N. Stephenson, and James R. Nette (Aug. 22, 1986).

determine whether they satisfy the decree standards." Memorandum Of The United States Regarding BOC Schedules For Equal Access at 15, (D.D.C.; Nov. 21, 1986).

- As part of its review of regional company responses to MCI's February, 1986 access requests, the Department noted that several companies were exploring the use of adjunct devices to provide equal access at nonconforming offices and requested detailed information from each of the regional companies concerning their experience with and plans for such devices. This information was requested so that the Department could evaluate the reasonableness of office conversions scheduled beyond a 24 month interval and report to the Court its conclusions regarding use of such adjunct devices. See, e.g., January 9, 1987 Letter from Nancy C. Garrison of the Department to Kenneth E. Millard of Ameritech.
- Based upon its review of information from each of the regional companies, the Department compared and contrasted the equal access progress of the regional companies on a wide range of issues, including:
  - Availability of equal access;
  - Conversion of conforming end offices;
  - Cellular radio equal access;
  - Equal access for 800 and 900 Services; and
  - Equal access from public telephones.

With respect to each of these issues, the Department used the highest level of performance achieved among the regional companies as a benchmark in assessing the progress of the others. Report Of The United States To The Court Concerning The Status Of Equal Access (D.D.C.; Oct. 31, 1986).

- The Department has made extensive use of benchmark comparisons among the regional companies' presubscription procedures and reports. Based on those comparisons, the Department has defined specific information that should be reported promptly to carriers as part of the presubscription ordering and conversion process, including:

  - Notice of receipt and disposition of presubscription orders;
  - Notice of conflicts among presubscription orders;
  - Notice that a presubscription order has been superseded by a subsequent order; and
  - Verification of presubscription order implementation.

  Report Of The United States To The Court Concerning Equal Access Implementation at 9-10, 11-52 (D.D.C.; Feb. 7, 1986).

- In comments in the FCC's Third Computer Inquiry, the Department noted that the existence of seven regional companies, separate from AT&T and from each other, should increase the regulatory abilities of the FCC:

> [I]nstead of being faced with a single accounting proposal from an integrated AT&T, the Commission will have the benefit of different accounting proposals from the BOCs and AT&T, each of which will have the incentive to devise a facially effective set of accounting rules. The multiplicity of accounting approaches offered the Commission may increase its ability in the future to establish the types of regulatory tool necessary to prevent discrimination and improper cost shifting.

Comments Of The United States Department Of Justice, CC Docket No. 85-229 at 41-42 (Nov. 13, 1985).

- As part of its review of the regional companies' decree compliance plans, the Department solicited additional comments on those plans from all interested parties. Appended to that Notice was the Department's list of more than 41 benchmark comparisons that the Department compiled through its review of those plans. Notice Of Comment Period Regarding The BOCs' Compliance Plans (D.D.C.; June 29, 1984).
- In the DOJ Response To Public Comments On The GTE Consent Decree, the Department also concluded that GTE's equal access performance "can be tested against the objective benchmarks of the practices of the divested BOCs . . . . ." 48 Fed. Reg. 46,655 at 46,657-68 (Oct. 13, 1983). See also GTE Competitive Impact Statement, 48 Fed. Reg. 22,026 at 22,033-4 (May 16, 1983) (any discrimination by GTE against interexchange

carriers can be detected by comparison with the regional companies).

III. USE OF BENCHMARK COMPARISONS BY THE COURT

Coinless Public Telephones

- In ordering Pacific Bell to provide access lines for AT&T's coinless public telephones, the Court rejected various regulatory and public interest arguments by Pacific Bell and noted that "[a]ll the Operating Companies except Pacific Bell appear to be providing the required access." United States v. AT&T, 583 F. Supp. 1257, 1258 n. 4, 1259 n. 11 (D.D.C. 1984).

800 Service

- The Court compared the reluctance of two regional companies to absorb the cost of a new billing system for intraLATA 800 Service with the willingness of the other regional companies to do so. United States v. AT&T, Mem. Opinion at 4 n.4 (D.D.C.; May 4, 1984).

Sale of CPE

- The Court compared Bell Atlantic's attempt to sell embedded CPE to the General Services Administration with the behavior of the other regional companies, which had not attempted such sales. United States v. AT&T, 578 F. Supp. 680, 684 n.13 (D.D.C. 1983).

Installation and Maintenance of CPE

- The Court stated that "with seven different Operating Companies involved in installation and maintenance, claims of one Operating Company that it had particular difficulties or problems with the equipment of manufacturers it did not sell could be readily undermined by a comparison with the practices of the other six companies." "Given the high probability of disclosure," the Court considered it "quite improbable that the Operating Companies would run this risk for relatively little gain." United States v. AT&T, 1982-2 Trade Cas. (CCH) ¶ 64,980 at 73,151 n.8 (Aug. 23, 1982).

Equal Access by GTE

- The Court recognized that "GTE's implementation of equal access will be judged not only against the requirements of the decree, but also against two objective benchmarks: (1) the Bell operating companies' provision of equal access; and (2) the provision of equal access by the GTE Operating Companies in the cities not served by Sprint." Any violation would be "relatively easy to detect." United States v. GTE Corp., 603 F. Supp. 730, 735 (D.D.C. 1984).

IV. USE OF BENCHMARK COMPARISONS BY THE FEDERAL COMMUNICATIONS COMMISSION

The Commission not only compares one regional company to another but also compares GTE to the regional companies and vice versa. In discussing "equal access," for example, the Commission recently observed:

> Because of inherent differences in equipment and size of carriers providing access facilities, the Commission adopted requirements for the larger exchange carriers, i.e., the Bell Operating Companies and General Telephone Operating Companies, which differ from those applicable to the generally smaller ITCs [Independent telephone companies].

Indiana Switch Access Division, File No. W-P-C 5671, Mimeo No. 3652 at 8 ¶ 16 (rel. Apr. 10, 1986) ("Indiana Switch Access Division").

Default Traffic

- All operating companies except Northwestern Bell proposed routing to AT&T all interLATA calls originated by any customer who did not presubscribe to another interexchange carrier. Northwestern Bell proposed allocating non-presubscribing customers pro rata. The Commission imposed an allocation plan on all the regional companies modeled after the Northwestern Bell plan, encouraged other regional companies to use Northwestern Bell's customer material format, and required the GTE operating companies to adopt a Northwestern Bell-type plan. Investigation of Access and

Divestiture Related Tariffs, 50 Fed. Reg. 25982, 25987 ¶ 32 & n.44 (June 24, 1985) ("Default Traffic Plan Order").

Sales Agency Plans

- Ameritech, NYNEX, BellSouth and U.S. West submitted new or modified sales agency proposals to the Commission. The Commission compared the plans and accepted only the BellSouth and U.S. West plans as being in compliance with the Sales Agency Order. Sales Agency Plans for the Furnishing of Intrastate Basic Service and Customer Premises Equipment, 59 Rad. Reg. (P&F) 309, 311 ¶ 3 (1985) ("Reconsideration Order").
- NYNEX and Ameritech submitted modified sales agency plans for approval. The Commission accepted both, commenting that Ameritech's amended plan conformed "essentially to the plan submitted by BellSouth and accepted by the Commission in the Reconsideration Order." Amended Sales Agency Plans of American Information Technologies Corp. and Operating Companies and NYNEX Operating Companies, ENF 84-49 and 84-51 at ¶¶ 1, 6 (rel. Oct. 20, 1986).

Cellular Interconnection

- Noting that some telephone companies had offered cellular carriers trunk-side connections (Type 2) as

well as standard line-side connections (Type 1), the Commission in effect, required all telephone companies, including GTE and the regional companies, to make available Type 2 interconnection. The Need to Promote Competition and Efficient Use of Spectrum for Radio Common Carrier Services, 59 Rad. Reg. 2d (P&F) 1275, 1284 ¶ 3 (rel. Mar. 5, 1986) ("Cellular Interconnection").

Comparably Efficient Interconnection

- The Commission in its Third Computer Inquiry proceedings reviewed proposals and comments from each regional company regarding nondiscriminatory access for information services. Ameritech's proposal to introduce a new network architecture, Feature Node/Service Interface, triggered the Commission's broader initiative to require similar proposals from the other regional companies.3/ "Because it is in the carrier's competitive self-interest to utilize efficient interconnections, we view Ameritech's proposal as an indication that an architecture with highly efficient interconnections can be designed." Amendment of Section 64.702 of the Commission's Rules and Regulations (Third Computer

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3/ Third Computer Inquiry, 50 Fed. Reg. 33,581, 33,600 ¶¶ 125-129 (Aug. 20, 1985).

Inquiry), 104 FCC 2d 958, 1063-1064 ¶ 212 (1986) ("Computer III Decision").

Equal Access

- The Commission granted waivers for recovery of equal access costs to NYNEX and Bell Atlantic. The Commission compared other waiver requests to these and granted them if they were "consistent." The Commission also based its rulemaking proceeding to establish permanent procedures for equal access cost recovery on NYNEX's and Bell Atlantic's approaches. MTS and WATS Market Structure Amendment of Part 69 of the Commission's Rules for Recovery of Equal Access Costs, CC Docket No. 78-72, FCC No. 86-595 at ¶¶ 8 & n.20, 11 (rel. Jan. 15, 1987).
- The Commission modeled a proposal requiring all operating companies to provide certain information to the IXCs serving their operating areas after a program implemented by Northwestern Bell. After reviewing comments in opposition to the Northwestern Bell plan from other operating companies, the Commission decided not to impose the requirements. GTE Sprint Communications Corp., US Telecom, Inc., Allnet Communications Services, Inc., and United States Transmission Systems, Inc. Joint Petition for Expedited Rulemaking, 60 Rad. Reg. 2d (P&F) 763, 768-769, 770 ¶¶ 12, 13, 17 (1986).

- The Commission established an equal access implementation schedule that distinguished the non-GTE independent telephone companies from GTE and the regional companies.4/ "[A]ccess requirements adopted for the BOCs and GTOCs are different from those approved for the ITCs." MTS and WATS Market Structure Phase III, 100 F.C.C. 2d 860, 874 ¶ 47 (1985).5/

Billing Information

- The Commission granted Ameritech's waiver request from certain Feature Group A (FGA) usage surrogate requirements. "Because we have concluded that Ameritech's proposal is a reasonable method for developing usage surrogates, we believe its use by other carriers could be appropriate for purposes of the filing required by the Surrogate Order. Accordingly, we will entertain petitions for waiver from other carriers who may wish to use the same method for calculating their usage surrogates." Petition of Ameritech Operating Companies

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4/ Indiana Switch Access Division at 9 ¶ 16; Petitions of MCI Telecommunications and GTE Sprint Communications Corp. Regarding the Validity of Connecticut Statute and Decisions of the Connecticut Dep't of Public Utility Control Relating to Unauthorized Intrastate Traffic, FCC 86-450 at 9 ¶ 37 (rel. Oct. 27, 1986).

5/ Indiana Switch Access Division at 1 ¶ 3.

for Waiver of Feature Group A Usage Surrogate Requirements, Mimeo No. 2788 (rel. Feb. 24, 1986).

Spread Spectrum Waivers

- The Commission granted Northwestern Bell a waiver to collocate enhanced technology in its central offices. The waiver was granted subject to numerous conditions. These conditions set the standard for waiver requests by other operating companies. The Commission promised prompt action if the other operating companies filed waiver requests consistent with the Commissionn's directives to Northwestern Bell. Applied Spectrum Technologies, Inc., 58 Rad. Reg. 2d (P&F) 881, 888-90 & n.28 (1985).6/

Generic Rate of Return Formula

- The Commission proposed assigning each exchange carrier to one of several "rate of return groups." Some operating companies argued that each Bell region should be treated as a separate rate of return group. In reply comments, Ameritech observed that sufficient similarities existed among the regions to justify grouping all regional companies together during the

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6/ See, e.g., The Mountain States Tel. & Tel. Co., AAD 6-1104, Mimeo No. 3515 at ¶ 1 (rel. Apr. 2, 1986).

first two-year return period. Specifically noting Ameritech's position, the Commission adopted a single rate of return group for all exchange carriers -- the regional companies, GTE and other independent telephone companies -- over the continuing objections of the other regions. Interstate Services of AT&T Communications and Exchange Telephone Carriers, 51 Fed. Reg. 1795, 1797 ¶ 10 (Jan. 15, 1986).

Rate Levels

- The Commission contrasted with other regional companies' practices Southwestern Bell's (SWB) requirement that MCI's seven-digit FGA numbers be associated with WATS line usage. The commission decided to reject SWB's tariff. "In regard to the proposal that Other Common Carriers (OCCs) supply seven-digit numbers in conjunction with terminating WATS access line service, it remains unclear why SWB does not use its own records, as have other regions." Southwestern Bell Telephone Co., Trans. Nos. 1505, 46, 1249, 817, 853, 135, Mimeo No. 2199 at ¶ 6 (rel. March 6, 1987).
- In developing its Annual 1985 Access Tariff Filings, Phase II, FCC 87-50 (rel. March 9, 1987), the Commission made the following comparisons from information submitted by GTE and Bell operating companies:

- The Commission contrasted operating companies' methods of calculating cancellation charges. (Id. at ¶¶ 94-100).

- The Commission compared operating companies' expedited order charge calculation methodologies to the NYNEX methodology. (Id. at ¶¶ 112, 116-123).

- The Commission compared operating companies' data on minimum monthly usage charges to review the reasonableness of those charges. (Id. at ¶¶ 39, 42, 22).

- The Commission chose BellSouth's proposed language as "an example of the clarity necessary to inform customers," after examining the operating companies' service interruption credit allowances. (Id. at ¶ 56).

- The Commission decided that it "would accept as reasonable a notice period of up to two days, as suggested by BellSouth" for service discontinuation. (Id. at ¶ 182).

o Over an eighteen month investigation of individual access tariff rates, the Commission compared the rates proposed by each operating company for individual access rate elements as one basis for determining whether the other operating companies' rates might be outside the zone of reasonableness and would, thus, require further investigation. The Commission also compared the regional companies' and GTE's proposed rate structures in arriving at a reasonable structure for various access rate elements. Investigation of Access and Divestiture Related Tariffs, 97 F.C.C.2d 1082, 1098-99, 1100-1101, 1104 ¶¶ 39, 44-45, 52 (Feb. 17, 1984).

- With the benefit of AT&T's analysis of those methodologies, the Commission compared the regional companies' various cost development methodologies. Investigation of Access and Divestiture Related Tariffs, 49 Fed. Reg. 23924, 23927-928 ¶¶ 21-27 (June 8, 1984).
- After comparing and contrasting other regional companies' interim 800 service tariffs, the Commission granted Bell Atlantic's requested waiver of Part 69 of the rules because the Commission had "previously granted similar petitions filed by US WEST, NYNEX and Ameritech for reasons that apply equally to Bell Atlantic." Interim 800 Exchange Access Tariffs, CC Docket No. 86-279, Mimeo No. 5586, at ¶¶ 2, 10 (rel. July 3, 1986).
- Various regional companies filed petitions requesting waiver, clarification or reconsideration of an order requiring the removal of all direct and indirect restrictions on the use of WATS access lines. After comparing all the petitions, the Commission concluded "that Ameritech's request for a waiver of the current standard ordering interval is justified." While rejecting other regional companies' waiver requests, the Commission granted Ameritech's waiver "for all carriers." Midyear 1986 Access Tariff Filings, 60 Rad. Reg. 484, 489, 490 ¶¶ 18, 22 (1986).

- The Commission cited the troubles that one regional company had in developing an accurate cost ratio between 2-wire and 4-wire service as a reason to impose a ratio on all regional companies that differed significantly from the ratios reflected by the regional companies who did not profess to have problems. The Commission then placed the burden on carriers that believed that a different ratio was appropriate to "make such a showing as the basis for a request for waiver . . . ." Investigation of Special Access Tariffs of Local Exchange Carriers, CC Docket No. 85-166 at 51-52 & n.152 ¶¶ 105-106 (rel. May 24, 1985) ("Special Access Cost Order").

Protocol Waivers - Accounting Plan

- The Commission used New Jersey Bell's protocol waiver request to establish standards for reviewing similar Computer II waiver requests by the other operating companies after directing certain revisions in New Jersey Bell's cost accounting plan. New Jersey Bell Tel. Co., ENF 84-22, Transmittal No. 474, Mimeo No. 0426 at 14-15 ¶ 32 (rel. Oct. 24, 1985).7/

7/ See, e.g., Pacific Bell Petition for Waiver of Section 64.702 of the Commission's Rules and Regulations to Authorize Protocol Conversion Offerings, AAD 6-1326 at 2
(Footnote Continued)

Protocol Conversion - Marketing Plan

- The Commission accepted various operating companies' proposals to market customer proprietary information because their procedures "are patterned after those [the Commission] approved for New Jersey Bell and the other Bell Atlantic companies" and "are also similar to those which the Commission approved when it relieved AT&T of the separate subsidiary requirement for the provision of CPE."8/ In addition, the Commission compared each operating company's protocol conversion offering with the conditions established for other operating companies in the Protocol Waiver Order.9/

(Footnote Continued)
¶ 13 (rel. Dec. 3, 1986) ("Pacific Bell Petition"); Southwestern Bell Telephone Co. Petition for Waiver of Section 64.702 of the Commission's Rules to Provide and Market Asynchronous Protocol Conversion on an Unseparated Basis, AAD 6-1473 at 2 ¶ 13 (rel. Jan. 5, 1987) ("Southwestern Bell Petition) ; Ameritech Operating Companies' Petition for Waiver of Section 64.702 of the Commission's Rules (Computer II) to Provide Protocol Conversion as an Adjunct to a Basic Packet Switched Network, AAD 6-1424 at 2 ¶ 13 (rel. Oct. 20, 1986) ("Ameritech Petition"); The Bell Atlantic Telephone Cos. Petition for Waiver of Section 64.702 of the Commission's Rules to Provide Certain Types of Protocol Conversion, AAD 5-1296 at 337 ¶ 47 (rel. May 19, 1986) ("Bell Atlantic Petition").

8/ See also Ameritech Petition at 6 ¶ 55; Pacific Bell Petition Bell Atlantic Petition at 338 ¶ 49.

9/ Petitions for Waiver of Section 64.702 of the Commission's Rules and Regulations, 100 FCC 2d 1057 (1985) ("Protocol Waiver Order").

Southwestern Bell Telephone Co. Petition for Waiver of Section 64.702 of the Commission's Rules to Provide and Market Asynchronous Protocol Conversion on an Unseparated Basis, AAD 6-1473 at 7 ¶¶ 18-21, 52 (rel. Jan. 5, 1987).10/

Non-Traffic Sensitive Cost Recovery Plans

- Five regions filed petitions seeking access charge waivers. Four regions proposed a fixed (non-usage sensitive) charge. New England Telephone proposed a usage sensitive scheme. Although the Commission rejected all petitions, it invited the operating companies to file waiver petitions requesting permission to implement plans similar to New England Telephone's proposal. Petitions for Waiver of Various Sectors of Part 69 of the Commission's Rules, 60 Rad. Reg. (P&F) 142, 193, & ¶ 144 (1986).

10/ See Ameritech Petition at 3 ¶ 20; Pacific Bell Petition at 3 ¶ 24; Bell Atlantic Petition at 333 ¶¶ 23-26.