BENCHMARKING AND THE EFFECTS OF ILEC MERGERS

DECLARATION OF
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October 14, 1998

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Benchmarking and the Effects of ILEC Mergers

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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

[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).

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.

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).*

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.