AFFIDAVIT

STATE OF Massachusetts

COUNTY OF Middlesex

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for the State and County aforesaid, personally came and appeared William E. Taylor, BellSouth Telecommunications, Inc., being by me first duly sworn deposed and said that:

He is appearing as a witness before the Kentucky Public Service Commission in "Investigation Concerning the Propriety of InterLATA Services by BellSouth Telecommunications, Inc. Pursuant to the Telecommunications Act of 1996," KY PSC Case No. 2001-105, and if present before the Commission and duly sworn, his testimony would be set forth in the annexed transcript consisting of 11 pages and 3 exhibit(s).

William E. Taylor

SWORN TO AND SUBSCRIBED BEFORE ME this
19th day of July, 2001.

NOTARY PUBLIC

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

IN RE: INVESTIGATION CONCERNING THE PROVISION OF INTERLATA SERVICES BY BELLSOUTH TELECOMMUNICATIONS, INC., PURSUANT TO THE TELECOMMUNICATIONS ACT OF 1996	**)** **)** **)** **)** **)**	**CASE NO. 2001-105**

REBUTTAL TESTIMONY

OF

WILLIAM E. TAYLOR, Ph.D.

ON BEHALF OF

BELLSOUTH TELECOMMUNICATIONS, INC.

JULY 30, 2001

n/e/r/a

Consulting Economists

REBUTTAL TESTIMONY OF WILLIAM E. TAYLOR, Ph.D.

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BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

DOCKET NO. 2001-105

JULY 30, 2001

I. INTRODUCTION AND SUMMARY

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND CURRENT POSITION.

A. My name is William E. Taylor. I am Senior Vice President of National Economic Research Associates, Inc. ("NERA"), head of its Communications Practice, and head of its Cambridge office located at One Main Street, Cambridge, Massachusetts 02142.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL, PROFESSIONAL, AND BUSINESS EXPERIENCE.

A. I have been an economist for over twenty-five years. I earned a Bachelor of Arts degree from Harvard College in 1968, a Master of Arts degree in Statistics from the University of California at Berkeley in 1970, and a Ph.D. from Berkeley in 1974, specializing in Industrial Organization and Econometrics. For the past twenty-five years, I have taught and published research in the areas of microeconomics, theoretical and applied econometrics, which is the study of statistical methods applied to economic data, and telecommunications policy at academic and research institutions. Specifically, I have taught at the Economics Departments of Cornell University, the Catholic University of Louvain in Belgium, and the Massachusetts Institute of Technology. I have also conducted

research at Bell Laboratories and Bell Communications Research, Inc. I have participated in telecommunications regulatory proceedings before several state public service commissions. Before the Public Service Commission of Kentucky ("Commission"), I have appeared in Case No. 96-608 (on probable economic benefits from BellSouth's entry into long distance telecommunications) on behalf of BellSouth Long Distance, Inc., and in Case No. 99-218 (ICG Telecom arbitration) on behalf of BellSouth Telecommunications, Inc.

I have also filed testimony before the Federal Communications Commission ("FCC") and the Canadian Radio-television Telecommunications Commission on matters concerning incentive regulation, price cap regulation, productivity, access charges, local competition, interLATA competition, interconnection and pricing for economic efficiency. I have also been chosen by the Mexican Federal Telecommunications Commission and Telefonos de Mexico ("Telmex") to arbitrate the renewal of the Telmex price cap plan in Mexico.

I have also testified on market power and antitrust issues in federal court. In recent years, I have studied—and testified on—the competitive effects of mergers among major telecommunications firms and of vertical integration and interconnection of telecommunications networks.

Finally, I have appeared as a telecommunications commentator on PBS Radio and on The News Hour with Jim Lehrer. My curriculum vita is attached as Exhibit WET-1.

Q. PLEASE DESCRIBE NERA, YOUR PLACE OF EMPLOYMENT.

A. Founded in 1961, National Economic Research Associates or NERA is an internationally known economic consulting firm. It specializes in devising economic solutions to

problems involving competition, regulation, finance, and public policy. Currently, NERA has more than 275 professionals (mostly highly experienced and credentialed economists) with 10 offices in the U.S. and overseas offices in Europe (London, Brussels, and Madrid) and Sydney, Australia. In addition, NERA has on staff several internationally renowned academic economists as Special Consultants who provide their professional expertise and testimony when called upon.

The Communications Practice, of which I am the head, is a major part of NERA. For over 30 years, it has advised a large number of communications firms both within and outside the U.S. Those include the regional Bell companies and their subsidiaries, independent telephone companies, long distance companies, cable companies, and telephone operations abroad (e.g., Canada, Mexico, Europe, Japan and East Asia, Australia, and South America). In addition, this practice has provided testimony or other input to governmental entities such as the FCC, the Department of Justice, the U.S. Congress, state regulatory commissions and legislatures, and courts of law. Other clients include industry forums like the United States Telephone Association. Last year, the NERA Communications Practice received the International Business Leadership Award from the Center for International Business Education and Research at the University of Florida, citing our work on incentive regulation, transfer pricing, technological convergence and opening new markets to competition.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I have been asked by BellSouth Telecommunications, Inc. ("BellSouth")—an incumbent local exchange carrier ("ILEC")—to address two sets of economic and regulatory issues

raised in this proceeding. The first set of issues arises principally in the testimony of Joseph Gillan, on behalf of the Southeastern Competitive Carriers Association ("SECCA"). I understand that SECCA represents the interests of the competitive local exchange carriers ("CLECs") operating in Kentucky and elsewhere in the southeast. Specifically, I respond to Mr. Gillan's contention that BellSouth is not entitled at present to interLATA authority under Section 271 of the Telecommunications Act of 1996 ("1996 Act"). Mr. Gillan would deny BellSouth that authority because, in SECCA's view, BellSouth has not yet met its obligations for creating the conditions for the emergence of meaningful local exchange competition in Kentucky.

The second set of issues concerns a performance assessment plan ("PAP") for BellSouth. Testimony has been filed thus far by BellSouth in support of its Self-Effectuating Enforcement Mechanisms ("SEEM") plan and by AT&T Communications of the Southern States, Inc. ("AT&T") in support of its Performance Incentive Plan ("PIP") Version 2.0. Specifically, I respond to testimony from witnesses Cheryl Bursh and Robert M. Bell (on behalf of AT&T).

Q. PLEASE SUMMARIZE YOUR RESPONSE TO SECCA'S POSITION.

A. SECCA has sponsored testimony in this proceeding that purports to show that (1) meaningful local competition is not occurring in Kentucky, (2) BellSouth is responsible for the alleged lack of local competition in Kentucky, and (3) BellSouth's application for interLATA authority under Section 271 of the 1996 Act should be denied until meaningful and irreversible local competition occurs in Kentucky.

My testimony presents evidence that competitive activity among CLECs has, in fact,

been increasing in Kentucky. More importantly, it cites evidence that CLEC activity increases markedly once the ILEC is granted interLATA authority. This evidence has two important implications:

1. CLECs, many of whom are also providers of interLATA long distance service, have strategic reasons for delaying or impeding entry by ILECs like BellSouth into the interLATA long distance market. An easy way to do so is to hold themselves back from entering and participating seriously in the local exchange market, so as to create the appearance of a lack of meaningful local competition (at least for residential customers). Once entry into the interLATA long distance market is allowed, however, those CLECs no longer have any strategic or economic interest in refraining from competing vigorously.
2. The benefits from interLATA long distance entry by ILECs like BellSouth are not restricted to greater competitive activity in the local exchange market alone. BellSouth's entry will also make the interLATA long distance market more competitive and reduce prices for consumers. In fact, with all carriers free to participate in any telecommunications market segment, innovative and higher quality services and service packages may be expected to be available from all carriers—BellSouth and CLECs alike—and these, in turn, will enhance consumer welfare. Thus, denial of interLATA authority to BellSouth on unsubstantiated grounds would only deny consumers the substantial benefits expected to accrue to them by the 1996 Act.

My testimony also disputes the link that SECCA's witness, Joseph Gillan, has attempted to make between the level of CLEC activity in Kentucky and BellSouth's terms and conditions for providing access to its network. I demonstrate that there are a whole host of other factors—none of which has anything to do with BellSouth—that can explain churn in the ranks of CLECs.

Finally, my testimony explains why Mr. Gillan's use of market share analysis is inconclusive and misleading, whether to establish the true current state of local competition in Kentucky, or to predict BellSouth's future market conduct with respect to its competitors. In particular, it explains why, in a market in which BellSouth's market share (whether of lines, revenue, or capacity) is decreasing, a supposedly high market share says

nothing about BellSouth's ability to dominate its competitors or to limit competition in any way. In fact, because the 1996 Act has lowered sunk costs and entry barriers for CLECs (by offering three alternative means of entry), local competition has taken hold and become irreversible. In this respect, the fundamental conditions have been created for BellSouth to receive interLATA authority in Kentucky.

Q. PLEASE SUMMARIZE YOUR POSITION ON THE PERFORMANCE ASSESSMENT PLAN FOR BELLSOUTH.

A. The Commission has an important opportunity to determine the course of future competition for all (not just local exchange) services in Kentucky. By selecting a PAP for BellSouth, it can set into motion the process by which BellSouth is eventually able to compete as a provider of all local and long distance services, just as its present competitors currently have the freedom to do.

The design of a PAP requires clear identification of the central goal: to provide a balanced set of incentives that would (1) enable BellSouth to provide wholesale services to CLECs on par with the services it provides to its own retail operations and (2) provide appropriate remedies to CLECs who have been denied wholesale services at parity, not windfall payments. The PAP that is most likely to achieve this goal is one based on deterrence and automatic compliance, rather than contentious processes intended to lead to payment of damages.

BellSouth and AT&T have submitted two competing PAP proposals for the Commission's consideration. Although the proposed PAPs agree on some matters, they also differ in some significant respects.

First, AT&T proposes to measure and remedy performance disparities at the level of sub-measures (the most elemental performance metrics), while BellSouth proposes to do so at the more aggregated transaction level.

Second, AT&T proposes to apply the same statistical methodology that is used to detect performance disparities to setting remedies as well. In contrast, while it proposes an analogous statistical methodology for detecting disparities, BellSouth intends to determine appropriate penalties for specific disparities based on business judgment (subject to periodic review) rather than on arbitrary and mechanical mathematical formulas unrelated to likely gains or losses.

Third, AT&T proposes to set a much lower threshold within its statistical methodology for detecting performance disparities that are also material in an economic (not just statistical) sense. BellSouth's counter-proposal, which is more appropriate for a transaction-level view of things, is to set that threshold of materiality initially at a relatively higher level but make it subject to periodic review.

Fourth, in contrast to BellSouth's proposal to set a cap on its annual financial liability as a percentage of its net revenue from services sold in Kentucky, AT&T supports a procedural cap which, in effect, amounts to no cap at all.

Finally, AT&T proposes specific adjustments to remedies when the volume of retail service provided by CLECs (relative) to BellSouth is "small" or when the market share of CLECs is collectively "low" (between zero and 50 percent). BellSouth disagrees that either adjustment is necessary or prudent.

My testimony addresses at length these five specific areas of disagreement,

particularly from an economic perspective. Specifically, it

1. Argues that performance measurement and payment of remedies at the transaction level is more meaningful and less likely to create a source of windfall payments to either individual CLECs or the state.
2. Explains the dangers of accepting a PAP in which a single statistical methodology (and simple-minded and arbitrary mathematical functions of test statistics) is relied upon for both detecting performance disparities and paying remedies. I argue further that any system of remedies that is totally divorced from the likely economic gains or losses from performance disparities can generate perverse incentives for CLECs and force BellSouth to compromise its ability to utilize its resources efficiently in the service of both retail and wholesale customers.
3. Explains the relevance of the materiality threshold, and how selection of different such thresholds can change incentives for BellSouth and its competitors.
4. Argues for the need to reduce business risks by setting a cap on BellSouth's annual financial liability, rather than leave that risk open and subject to manipulation by CLECs.
5. Explains why proposed competitive entry volume and market penetration adjustments are economically unjustified and could lead to undesirable strategic behavior by CLECs.
6. Explains why any PAP ultimately approved by the Commission must go into effect only when BellSouth receives interLATA long distance authorization in Kentucky, so that all competitors are able to operate on an even footing.

II. SECCA'S OBJECTIONS TO BELLSOUTH'S PETITION FOR INTERLATA AUTHORITY UNDER SECTION 271 OF THE 1996 ACT

Q. WHAT IS SECCA'S POSITION REGARDING BELLSOUTH'S PETITION FOR INTERLATA AUTHORITY UNDER SECTION 271 OF THE 1996 ACT?

A. Mr. Gillan, as SECCA's principal witness, accuses BellSouth [at 3] of having used "delaying tactics over the past five years" to make it impossible for the "emergence of measurable and meaningful local competition" in Kentucky. Evidently, Mr. Gillan believes that there is not only insufficient local competition in Kentucky today to justify granting BellSouth the interLATA authority it seeks, but also that BellSouth remains in a position to leverage any grant of that authority to achieve "even greater dominance in the

future."

Mr. Gillan asks [at 3] that any grant of interLATA authority to BellSouth be predicated on confirmation that BellSouth is providing potential entrants non-discriminatory and cost-based access to its network, and that the acid test for that purpose be that local competition in Kentucky be "measurable and meaningful."

Q. WHAT EVIDENCE DOES MR. GILLAN SUBMIT TO SUPPORT HIS ADVOCACY?

A. Mr. Gillan contends [at 4] that BellSouth "exaggerates" the amount of local competition actually occurring in Kentucky. In his view, resale activity is "neither viable nor irreversible," and has actually declined more than 28 percent in the last three months. He also believes that competition based on unbundled network elements ("UNEs") leased from BellSouth is minimal at only 1.5 percent of the market, and that facilities-based competition from CLECs is negligible and oriented only toward the most lucrative customer segment.

In addition, Mr. Gillan devotes much of his testimony attempting to demonstrate that the UNE rates that BellSouth has proposed in its Statement of Generally Available Terms and Conditions ("SGAT") would, if anything, foreclose any meaningful local competition. To overcome this perceived barrier to meaningful local competition in Kentucky, Mr. Gillan recommends that the Commission require BellSouth to provide its UNEs (and all possible UNE combinations, including "new combinations") on non-discriminatory terms and at cost-based rates. Mr. Gillan also asks the Commission to establish an expedited dispute resolution procedure.

Q. WHAT IS YOUR OVERALL RESPONSE TO MR. GILLAN'S TESTIMONY?

A. The advocacy in Mr. Gillan's testimony is clearly structured to serve and secure SECCA's own economic interests. However, that does not mean that the Commission should only be concerned with the issues Mr. Gillan raises, or the manner in which he raises them. Evidently, Mr. Gillan's testimony is designed to make two points:

1. Meaningful local competition is not occurring in Kentucky.
2. Meaningful local competition cannot occur in Kentucky unless certain remedial measures are taken. At a minimum, BellSouth must be denied its petition for interLATA authority under Section 271 of the 1996 Act.

My testimony questions the basis of the first of those conclusions and Mr. Gillan's reading of the available data on local competition. It also disputes the narrow public interest focus implicit in Mr. Gillan's testimony. For example, Mr. Gillan appears to overlook completely the 1996 Act's intent to promote competition in *all* telecommunications markets. Although the FCC has predicated interLATA authority for BellSouth (and other Regional Bell Operating Companies or "RBOCs") on the creation of conditions that favor competitive entry in local exchange markets, it has *not* established a litmus test (in terms of market share or anything else) for that threshold level of local competition. Besides, the Commission has a legitimate interest in considering the benefits that *both* local competition and greater long distance competition would bring to consumers in Kentucky. The narrow focus of Mr. Gillan's testimony attempts, in effect, to obscure the immense public interest value that would stem from BellSouth's entry into the in-region long distance market. Mr. Gillan also overlooks mounting evidence that local competition and CLEC activity are, in fact, more likely to grow when the incumbent RBOC is granted interLATA authority than when the status quo is maintained.

As for Mr. Gillan's second conclusion, it appears that he is asking the Commission to apply measures that, by any standard, are excessive and even draconian for ensuring that BellSouth does its part to facilitate the growth of local competition. If the SGAT rates are found wanting in any way, then the Commission would surely engage the relevant parties to determine how they would need to be modified to meet the FCC's rules (based on the 1996 Act) for non-discriminatory and cost-based access to UNEs. In fact, that very process is currently underway in Kentucky Commission Case No. 382. However, the conditioning of BellSouth's interLATA authority on some unspecified or vague threshold of local competition is wholly unnecessary and contrary to the public interest.

III. LOCAL COMPETITION IN KENTUCKY

1. CLEC Market Performance and the Public Interest

Q. THROUGHOUT HIS TESTIMONY, MR. GILLAN DISPUTES BELLSOUTH'S CLAIM THAT LOCAL COMPETITION IS OCCURRING IN KENTUCKY. DO YOU AGREE WITH HIS POSITION ON THE MATTER?

A. No. Mr. Gillan complains that local competition is, if anything, on the decline in Kentucky, and then affixes the blame for that fully on BellSouth and the manner in which its UNEs have been priced. I disagree with both his assessment of the state of local competition and the putative role that BellSouth may have in the course that competition has taken in Kentucky.

Q. WHAT IS YOUR PRIMARY DISAGREEMENT WITH MR. GILLAN IN THIS REGARD?

A. Mr. Gillan is mistaken in connecting the manner in which BellSouth provides access to its network to potential entrants to what he considers to be a very low level of actual local competition in Kentucky. While I address the latter point about the actual state of local competition later, I do not accept the connection that Mr. Gillan makes. For example, he states [at 7]:

> Importantly, BellSouth's empirical estimates of competition are contradicted by other evidence, while its anecdotal information relies heavily on the early (and presumptive) announcements by CLECs that have either experienced financial difficulty or deployed technologies that fell well short of expectations. Far from illustrating a competitive local marketplace in Kentucky, the underlying data demonstrates that the promise of a competitive local market in Kentucky remains an elusive goal.

I find this statement remarkably candid in its recognition of various factors—none of which has anything to do with BellSouth—that have hampered, delayed, or otherwise stalled entry by several prospective CLECs. By now, we are all familiar with the recent changes in the economy, in general, and in capital markets, in particular, which have adversely affected the financial integrity and risk-taking ability of new entrants. The churn experienced by those prospective entrants is nothing unique to (1) Kentucky, (2) the telecommunications industry, or (3) this most recent period in history. Moreover, it is the nature of competition that entrants succeed or fail because what they do or try sometimes works and sometimes doesn't. In most markets, there are no guarantees—or guarantors—of successful entry. Although the protections and the assistance provided to entrants in the telecommunications industry surpass greatly those available in non-regulated industries or markets, there is no denying the possibility that the business cycle or the entrants' own actions contribute in large part to determining how successfully competition can take root

or grow. None of this may have anything to do with the behavior and conduct of the incumbent firm.

Q. COULDN'T, AS MR. GILLAN SUGGESTS, BELLSOUTH'S BEHAVIOR TOWARDS ITS RIVALS HAVE AN EFFECT ON THE STATE OF LOCAL COMPETITION IN KENTUCKY?

A. Of course it could. After all, BellSouth is the incumbent carrier that once was the sole owner of network facilities and provider of services within its service territory. However, having recognized just how expensive it could be for competitors to enter using solely their own facilities, the 1996 Act and subsequent FCC rules have guaranteed that entry could occur initially by easier means, e.g., through resale of the incumbent's retail services and cost-based and non-discriminatory access to essential network elements and platforms. I do not disagree with Mr. Gillan that if BellSouth were to evade providing these means of entry to potential rivals, competitive entry would be disrupted. However, he has not offered proof that BellSouth has provided inadequate access to its network. Nor has he shown any clear connection between BellSouth's market conduct and the performance and economic fortunes of its new local exchange rivals in Kentucky.

Providing non-discriminatory and cost-based access to BellSouth's network reduces and eliminates barriers to entry that competitors would otherwise face. However, removing entry barriers does not, by itself, guarantee successful entry and operation by new CLECs. Any supposed failure of "meaningful" local competition in Kentucky can also be explained by a host of other factors, including, but not limited to, the following.

1. New carriers often experience crippling financial difficulties, particularly in tight capital

or credit markets where continued dependence on venture capital becomes problematic.

2. Entrants sometimes adopt technologies or market strategies that are not cost-effective or that do not appeal to customers.
3. In some markets, new carriers must compete against inefficient retail market prices, e.g., where universal service obligations set up implicit or explicit subsidies that make competition in the local exchange difficult and unattractive.
4. Finally, carriers who already provide interLATA services may have their own strategic reasons to delay entry or serious participation in the market.

Where CLECs avoid these problems, entry has been more brisk, e.g., to serve business local exchange customers. Also, CLEC entry, as a rule, has been greater in the more populous and industrialized states than in the more rural or less populous states. For example, according to a recent FCC report, the states with double-digit CLEC access line market share were, in order, New York, Minnesota, Louisiana, Kansas, Texas, Massachusetts, Georgia, Illinois, Iowa, and Pennsylvania.[1] Highly averaged access line charges frequently make it difficult for local exchange carriers to recover their line and service costs in the sparsely populated states and, hence, make entry less attractive to CLECs.

All of these factors can have a direct bearing on the course of local competition in Kentucky, even though Mr. Gillan would prefer that the Commission's spotlight remain trained solely on BellSouth's market conduct.

Q. PLEASE EXPLAIN WHAT STRATEGIC REASONS POTENTIAL COMPETITORS MAY HAVE FOR DELAYING THEIR ENTRY AND SERIOUS PARTICIPATION IN THE LOCAL EXCHANGE MARKET.

[1] See FCC, *Local Telephone Competition: Status as of December 31, 2000,* Industry Analysis Division, Common
(continued...)

A. Once the 1996 Act has been fully implemented, the telecommunications industry will see vigorous competition in each of its market segments. Prior to the 1996 Act, interstate long distance markets were kept insulated from competition from ILECs, while those ILECs did not have to face competition from other carriers in local exchange markets. Now, after the 1996 Act, reciprocal entry into each other's markets would leave these carriers with both opportunities and problems. Obviously, the greatest opportunity in these seamless markets with all service prohibitions lifted would be for a carrier—be it an erstwhile local exchange carrier or an erstwhile long distance carrier—to offer comprehensive service combinations on attractive terms (such as term and volume discounts, one-source billing, comprehensive customer service, etc.). On the flip side, the greatest problem would be for a carrier to protect its customers for, and profit margins from, its traditional services, even as it deals with new competitors for those services and tries itself to break into new market segments.

With economic incentives shaped in this manner, it is perfectly understandable for both ILECs and long distance carriers to want to act in ways that protect their positions in their traditional lines of business for as long as possible. The difference, of course, is that while the 1996 Act imposes a duty on ILECs like BellSouth to perform market-opening functions, there is no corresponding or reciprocal duty on long distance carriers. Accordingly, the long distance carriers—many of which are manifestly interested in assuming the role of CLECs in the local exchange market—have strategic reasons to delay entry by BellSouth and other RBOCs into the interstate long distance market. Here, too,

(...continued)

Carrier Bureau, May 2001.

the fundamental asymmetry is striking: even though the public interest would be well served by additional competition for long distance services, there is little attempt to examine or discuss that possibility. Rather, there has been a concerted effort all around the country to impede RBOC entry into the interstate interLATA long distance market, even after those RBOCs have satisfied various state regulatory agencies about their compliance with the requirements of Sections 271 and 272 of the 1996 Act.

Q. IS THIS SUPPOSEDLY STRATEGIC ATTEMPT TO DELAY RBOCs' RECEIPT OF INTERLATA AUTHORITY MERELY A MATTER OF SPECULATION ON YOUR PART?

A. Not at all. First, it is important to recognize that the local exchange ($112 billion) and interstate long distance ($108 billion) markets have roughly equal-sized annual revenues.[2] Therefore, arguably, *both* sides have economic incentives to delay or block further competition. However, the duties imposed on RBOCs like BellSouth by the 1996 Act and FCC rules make it much more difficult for the RBOCs to impede the development of local competition. The long distance carriers and would-be CLECs face no corresponding burden in delaying RBOC entry into interLATA markets.

Second, there is now increasing evidence that the strategy of stalling and blocking interLATA authority for RBOCs is rapidly abandoned once the FCC, in fact, grants such authority in any given state. In fact, FCC and other sources now confirm that CLEC entry and participation have increased significantly *after* interLATA authority was granted to the

[2] See FCC, *Telecommunications Industry Revenue: 1999*, Industry Analysis Division, Common Carrier Bureau,
(continued...)

RBOCs. This abrupt turnabout only substantiates the conclusion that any perceived lack of local competition can be attributed to strategic game-playing by long distance carriers who are typically the most well-resourced and durable CLECs to enter local markets.

Q. PLEASE ELABORATE ON THE GROWING EVIDENCE IN THIS REGARD.

A. A recently released FCC report offers startling evidence on how quickly CLEC competitive activity has increased in New York and Texas, the first two states to win FCC approval for their incumbent RBOCs (Verizon and SBC, respectively) to offer in-region interLATA long distance services.[3]

According to this report (in particular, Tables 6, 8, and 12) and Table 4 of another FCC report):[4]

1. 20 percent of end-user lines in New York were served by CLECs (the most of any state) as of December 31, 2000, a full year since Verizon received interLATA authority in the state. This was up from 9 percent at the end of 1999. ILEC-served lines actually declined by over 1.7 million (14 percent) during that year, while CLEC-served lines gained by over 1.5 million (132 percent).
2. 12 percent of end-user lines in Texas were served by CLECs (fifth highest among all states) as of December 31, 2000, six months since SBC received interLATA authority in the state. This was up from 4 percent at the end of 1999. ILEC-served lines actually declined by over 538,000 (4 percent) during that year, while CLEC-served lines gained by over 1.1 million (188 percent). CLECs added 644,980 lines in the second half of 2000 alone (following the grant of interLATA authority for SBC), or nearly 60 percent of the annual gain in 2000.

(...continued)

September 2000.

[3] See FCC, *Local Telephone Competition: Status as of December 31, 2000*, Industry Analysis Division, Common Carrier Bureau, May 2001 ("*Local Competition Report*"). Also see the accompanying news release "Federal Communications Commission Releases Latest Data on Local Telephone Competition."

[4] *Local Telephone Competition at the New Millennium*, Industry Analysis Division, Common Carrier Bureau, August 2000.

3. Of the 27 states for which complete data on end-user lines were available from both 1999 and 2000, only Virginia exceeded the impressive rate of growth of end-user lines served by CLECs in New York and Texas.
4. CLEC's share of end-user lines in New York and Texas were higher by 150 and 50 percent, respectively, than the CLEC share nationwide (8 percent).
5. As of December 31, 2000, Texas and New York had the highest and second highest number of CLECs (at 25 and 23, respectively) in operation. Also, they had the second and third highest percentage—after Florida—of Zip Codes with seven or more operational CLECs (at 36 and 32 percent, respectively). In contrast, among the most populous states, New York and Texas had among the lowest percentage of Zip Codes not served by any CLEC at all (at 16 and 7 percent, respectively).

Taken together, these statistics reveal the degree to which increased competitive activity in the local exchange market is associated with states in which the incumbent RBOCs have received interLATA authority from the FCC. From the standpoint of economic incentives, it makes sense that CLEC activity should be so pronounced in the larger and more populous states in which all remaining barriers to competition in all market segments have been removed.

Q. IS THERE ANY OTHER EVIDENCE ON THIS ISSUE?

A. Yes. A recent study conducted by Professor J. A. Hausman at the Massachusetts Institute of Technology compared the effects of long distance entry by Verizon in New York and SBC in Texas with those of the status quo in two control states, Pennsylvania and California.[5] Professor Hausman used Pennsylvania and California as statistical control groups for New York and Texas (respectively) because the states are similar with respect to LATAs, ILEC ownership structure, and geography, and differ mainly by whether the ILEC has received Section 271 authority.

[5] See Exhibit WET-2 for a summary.

The Hausman study found that basic local service bills fell by 6.6 percent in New York after Verizon received interLATA authority and by 2.8 percent in Texas after SBC received interLATA authority. More importantly for present purposes, the study estimated that CLECs' revenue market share for local services rose dramatically in New York and Texas, relative to the control states, after interLATA authority was granted. In New York, market share rose from 3.5 percent to 17.2 percent (compared to Pennsylvania's 1.1 percentage point gain) and, in Texas, the gain in market share was from 8 percent to 15.1 percent (compared to California's 0.9 percentage point gain).

In addition, the Hausman study found that long distance entry by Verizon in New York and SBC in Texas induced substantially greater reductions in long distance prices in those states than were observed in the control states following FCC action to reduce interstate access charges. Professor Hausman estimated that long distance prices were 9-14 percent lower in New York than they would have been without interLATA authority for Verizon, and 19-24 percent lower in Texas than they would have been without interLATA authority for SBC.

These findings are significant for two reasons. First, they present the first and most comprehensive comparison to date of the differential experiences of comparable states that differ primarily in that one has allowed long distance entry by the ILEC and the other has not. The use of control states puts the post-long distance entry experience of New York and Texas in the proper perspective. Second, they confirm the FCC's survey-based report that competitive activity *in the local exchange markets* increased dramatically after the two states were allowed to have unfettered long distance competition. From the public interest

standpoint, therefore, the consumer benefits of granting interLATA authority to RBOCs like BellSouth are two-pronged: (1) bill savings and welfare gains from significantly lower long distance prices and (2) lower local service bills and greater CLEC penetration.

2. Market Share Analysis and BellSouth's Market Performance

Q. MR. GILLAN ALLEGES THAT THE VARIOUS INDICATORS OF ENTRY (RESALE, UNE-BASED, AND OWN FACILITIES-BASED) IN KENTUCKY DO NOT PAINT A HOPEFUL PICTURE ABOUT LOCAL COMPETITION IN KENTUCKY. DO YOU ACCEPT HIS ANALYSIS AND CONCLUSIONS?

A. No. Mr. Gillan's conclusions are unacceptable because his analysis is flawed. As discussed above, recent statistics (especially those released by the FCC) paint a far more optimistic picture about CLEC activity, particularly *in response* to the grant of interLATA authority to the incumbent RBOC. Also, although Mr. Gillan concludes that it must be BellSouth's fault that CLEC activity in Kentucky is, in his view, anemic, the Commission should keep in view the host of other factors (discussed above) which have a direct and non-negligible effect on such activity.

Mr. Gillan contends [at 9] that the resale-based entry "is in rapid decline, fundamentally contradicting *any* claim that such entry is either economically viable or irreversible."[6] First, Mr. Gillan's conclusion that the number of resold lines is rapidly declining stems from an incorrect interpretation of the data, as discussed in the rebuttal testimony of BellSouth witness Cindy Cox.

Second, even if resale demand were falling or were not growing at an increasing rate, one cannot conclude that local competition has failed. The role of resale in telecommunications is transitional. It is a mechanism to allow entrants to compete in mass markets without having to deploy a ubiquitous network, much as MCI and Sprint were able to do in the early days of long distance competition by reselling AT&T services. In the long run, resale is not expected to be as profitable as facilities-based entry: resale-based entry makes it more difficult for CLECs to differentiate their services or add their own innovative features (a matter that Mr. Gillan recognizes, at 10) and is, therefore, not ideal for CLECs eager to offer tangible alternatives to the ILEC's services. However, as an entry strategy, resale serves CLECs well in areas where wholesale facility costs exceed the retail prices that ILECs are allowed to charge.

Third, the period identified by Mr. Gillan is also one in which the UNE platform (combined loop and switching) has been made available to CLECs. As UNE-P is functionally similar and significantly cheaper than resale, it is not surprising that CLECs would substitute UNE-P facilities for resale.

Finally, such substitution is entirely consistent with the U.S. Department of Justice's concept of irreversible competition, Mr. Gillan's claim to the contrary notwithstanding. The irreversibility standard for competition was developed for the Justice Department by Professor Marius Schwartz and is described as follows:

> The foregoing analysis persuades me that BOC entry is appropriate when, and

(...continued)

[6] Emphasis in original.

> only when, the market in the state has been irreversibly opened to local competition….Opening the market does not require evidence of local competition of all forms and in all regions of a state sufficient to substantially discipline BOC market power. The Act aims to let market forces determine what forms of entry work best and where…[7]

By this standard, entry and operation by CLECs, taken as a *group*, should become irreversible before local competition can be said to have taken hold. However, Mr. Gillan believes that CLECs have not made much headway using the two other means of entry either. For example, he estimates [at 11, Table 3] UNE-based competition in Kentucky to be limited to less than 1.5 percent or less. Furthermore, he contrasts [at 16, Table 5] BellSouth's estimate of a CLEC market share (in line terms) of 6.3 percent against his own estimate of 3.4 percent (with resale more than half of that figure) and only 1.3 percent (when resale is excluded). While BellSouth witness Cindy Cox responds to Mr. Gillan on this point, I note here that even the FCC has found the CLEC market share of end-user lines alone in Kentucky to be 3 percent.[8] If even 35 percent of these end-user lines are facilities-based (which the FCC found to be the case on average),[9] that would imply that CLEC share of facilities-based lines in Kentucky is at least 1.05 percent, considerably higher than Mr. Gillan's estimate of 0.2 percent [at 16, Table 5].

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[7] Affidavit of Marius Schwartz, *Competitive Implications of Bell Operating Company Entry into Long Distance Telecommunications Services*, May 14, 1997, filed with the FCC as an appendix to the Department of Justice's evaluation of SBC's application to provide interLATA services in Oklahoma, May 16, 1997, In the Matter of Application of SBC Communications, Inc. Pursuant to Section 271 of the Telecommunications Act of 1996 to Provide In-Region, InterLATA Services in Oklahoma, CC Docket No. 97-121, and of Ameritech's application in Michigan, June 25, 1997, In the Matter of Application of Ameritech Michigan Pursuant to Section 271 of the Telecommunications Act of 1996 to Provide In-Region, InterLATA Services in Michigan, CC Docket No. 97-137.

[8] FCC, *Local Competition Report*, May 2001, Table 6.

[9] FCC, *Local Competition Report*, at 1.

Q. DOESN'T MR. GILLAN CHALLENGE [AT 17-18] THE FCC'S ESTIMATE AS BEING INFLATED FOR FAILING TO ADJUST FOR THE DIFFERENCE BETWEEN "LINES" AND "VOICE GRADE EQUIVALENTS?"

A. Yes, Mr. Gillan makes the unsupported assertion that the FCC survey report incorrectly compares BellSouth's lines to CLECs' voice grade equivalents. However, the FCC's instructions to survey respondents—which I have attached as Exhibit WET-3—make it clear *several times* that the information sought pertains to voice grade equivalent lines. There is no credible reason to believe that, contrary to these instructions, ILECs alone responded with line measures, while all CLECs responded faithfully with voice grade equivalents.

Q. MR. GILLAN USES MARKET SHARE ANALYSIS TO SUPPORT HIS CONTENTION THAT LOCAL COMPETITION IS INSUFFICIENT IN KENTUCKY BECAUSE BELLSOUTH HAS FAILED TO PROVIDE CLECS NON-DISCRIMINATORY ACCESS TO ITS NETWORK. DO YOU ACCEPT HIS REASONING?

A. No. As I remarked earlier, the connection Mr. Gillan makes between an allegedly low level of local competition in Kentucky and BellSouth's alleged denial of non-discriminatory access to its competitors is overly simplistic and ignores other reasons for variations in CLEC activity. Moreover, Mr. Gillan [at 3] makes a larger inference with which I disagree, namely, that were BellSouth to be granted interLATA authority in

Kentucky, it would "gain even greater dominance in the *future*."[10] Although Mr. Gillan does not explain the sense in which he uses the term "dominance," I am aware of at least two possible usages.

First, dominance may simply be a statement about market share (in terms of revenue, lines, or capacity), but carry no further connotation about the firm's behavior. That is, the focus is on market *structure*, rather than on market *conduct*. Alternatively, dominance may imply not merely "high" market share, but also the ability to exert market power to the detriment of the firm's competitors, i.e., a statement about both market structure and conduct. No matter how Mr. Gillan means to use the term, the only matter of substance that should concern this Commission is whether a high market share for BellSouth now and in the future would augur badly for Kentucky consumers. In other words, is BellSouth able now, and will it be able in the future, to exert market power simply on the strength of its high market share? In my opinion, BellSouth's high market share in the local exchange market presently foreshadows no such dire outcome.

Q. PLEASE EXPLAIN WHY A MARKET SHARE ANALYSIS (SUCH AS MR. GILLAN CONDUCTS) DOES NOT NECESSARILY IMPLY THAT BELLSOUTH WILL EXERCISE MARKET POWER NOW AND IN THE FUTURE.

A. To begin with, it is useful to remember that, for historical reasons, BellSouth was the sole service provider in the local exchange market in Kentucky until the passage of the 1996 Act. Although, by definition, this gave BellSouth monopoly status prior to the 1996 Act,

[10] Emphasis in original.

i.e., a market share of 100 percent, it is useful also to remember that BellSouth was never permitted to exercise market power commensurate with that status. In other words, regulation disciplined BellSouth's actions in the local exchange market, performing the same function that competition would perform in a market with no entry barriers.

Now, in the wake of the 1996 Act, the local exchange market in Kentucky is in transition to deregulation and competition. That target state, however, cannot be attained by simply passing legislation or encoding the new laws into new rules of engagement. The new laws and rules have merely provided the necessary conditions, i.e., reduced barriers to entry, by which competitive entry can occur. This removal of entry barriers does *not* guarantee—nor should it—that any entry that occurs will be successful and will occur at BellSouth's expense. That is, there can be no expectation that BellSouth will not compete as strenuously to keep its customers as new entrants may compete to take those customers away.

While ensuring fair and efficient access to BellSouth underlying network is consistent with promoting competition in the local exchange, handicapping any one party—be it BellSouth or a CLEC—is not. Thus, beyond setting terms and conditions which ensure that CLECs can engage with BellSouth on an efficient and equitable basis, there is no compelling reason for the Commission to somehow restrain BellSouth until its market share falls to some acceptable, but entirely arbitrary, level. I believe that the Commission has actively pursued over the past five years precisely the rules of engagement that create the necessary conditions for competition. It has another opportunity now to ensure that BellSouth's proposed SGAT remains supportive of those conditions.

The flaw in Mr. Gillan's market share analysis is that it fails to recognize that there is no magic number or level to which the incumbent firm's market share must fall before the process of competition that is underway can be declared to be beyond harm's reach. Thus, he complains [at 17] that "a share of only 6.3% after 5 years [since the 1996 Act] is not indicative of the level of competition that would be expected if CLECs truly enjoyed nondiscriminatory access…" In fact, no specific or trigger level of market share is contemplated for this purpose in either Section 271 of the 1996 Act or in the FCC's implementing rules.

In a market in which every firm starts from scratch (i.e., with little or no market share), but becomes increasingly concentrated because one or more firms in it are able to extract some advantage not available to the rest, there may be legitimate cause for concern. However, in a market in which one firm, for historical reasons, starts with 100 percent market share and experiences an erosion of that share with increasing competitive entry, there cannot be the same cause for concern. In other words, only increasing, rather than decreasing, market share of the dominant incumbent (or increasing concentration of the market as a whole) should be worthy of regulatory investigation and action. Mr. Gillan provides no evidence that that is happening, only that BellSouth's market share is not falling fast enough for his taste. Again, as I said earlier, there can be numerous reasons for that, none of which is connected to BellSouth.

Q. ARE THERE OTHER MECHANISMS IN PLACE WHICH WOULD PREVENT ANY EFFORT BY BELLSOUTH TO SUBVERT COMPETITION FROM CLECS?

A. Yes. Even after BellSouth is allowed entry into the interLATA long distance market, the

Commission would retain full oversight over BellSouth's rates for access to its network, the quality of wholesale service provided to CLECs, etc. Besides, the CLECs themselves are obviously vigilant and have the resources to seek relief and redress if they feel exploited or disadvantaged in any way by BellSouth. BellSouth itself has implemented a voluntary and self-effectuating enforcement mechanism that obliges it to pay expeditiously to aggrieved parties penalties for poor or non-compliant wholesale service quality. All of these factors provide protections over and above what would be available from the marketplace alone. Hence, a market share analysis cannot convey the real picture of the protections available against attempt by BellSouth to manipulate its competitors.

Q. EARLIER YOU CITED MARKET SHARE DATA TO CLAIM THAT COMPETITIVE ACTIVITY HAS BEEN INCREASING IN KENTUCKY. DOES THAT NOT CONFLICT WITH YOUR PRESENT CLAIM THAT MARKET SHARE ANALYSIS CONTAINS NO USEFUL INFORMATION ABOUT BELLSOUTH'S IMPACT ON COMPETITION?

A. No. My earlier reference to market share data was intended to provide evidence of competitive inroads made by CLECs since the 1996 Act. However, such market share information cannot, and should not, be used in any way to draw inferences about BellSouth's market conduct in the future, as Mr. Gillan has done.

Q. ARE YOU SAYING THAT MARKET SHARE IS NOT A SOUND PREDICTOR OF MARKET CONDUCT?

A. Yes. Market share reflects the market structure that has resulted from *past* actions. With

BellSouth's sole provider status in the past, it should be no surprise that its market share is where it is today, a few short years after the 1996 Act. A much better predictor of market power and the future conduct of firms in the market are the conditions of entry and exit. If barriers to entry remain, the incumbent firm will be able to exert market power unless otherwise restrained. However, once those barriers to entry (and exit) have been removed or reduced, even a dominant incumbent firm may be in no position to exercise market power or prevent competitive activity.

Economists agree that sunk costs are the most important barrier to entry or exit. These are costs that are not always fixed but cannot be easily recovered or reversed if a firm should decide to scale back or stop production or, in the extreme, exit the market. Faced with the prospect of having to make large and risky capital outlays simply to enter the market, and the further prospect of being unable to recover those costs in the event of having to exit the market, a firm may choose not to enter the market in the first place. However, any mechanism or regulation that lowers those sunk costs to negligible or manageable levels holds the promise of greater competitive entry and participation. That mechanism was provided by the 1996 Act and follow-on FCC rules in the form of the ILEC's duties to interconnect, unbundle its network, and offer its services for resale at wholesale discounts. The considerable facility costs of entry having been avoided in this fashion, new CLECs can form and compete despite the obvious difference in size between themselves and the incumbent. Although other sunk costs, e.g., those associated with developing a customer base, can still remain, resale-based entry can provide the respite CLECs need to be able to start offering service while taking the time to acquire and retain

customers.

Q. PLEASE EXPLAIN HOW, DESPITE THE PRESENCE OF A DOMINANT INCUMBENT FIRM, THE ABSENCE OF SUNK COSTS OF ENTRY AND EXIT CAN PREVENT ANY EXERCISE OF MARKET POWER.

A. Competition—particularly of the "perfect" or textbook kind—is not the only form of market organization that can prevent the exercise of market power. Another form of market organization known as "contestability" can prevent market power from emerging in a market that has one dominant firm (in terms of market share) and a competitive fringe of relatively small firms. According to the theory of contestable markets, when the market structure is as described and sunk costs are low or non-existent, even small competitors can carry out "hit-and-run" entry, i.e., enter at very low cost, undercut the dominant firm for services for which the latter is charging supra-competitive prices, collect a profit, and exit at very low cost, if necessary.[11] Although this could create some churn in the ranks of the small competitors, the end result is to effectively discipline the pricing practices of the dominant incumbent firm. Despite its relatively large size, that firm cannot exercise market power or abuse consumers.

Q. DOES THE MANNER IN WHICH MARKET SHARE IS MEASURED HAVE ANY BEARING ON THESE ISSUES?

A. No, the basic unsuitability of a market share measure for predicting future market conduct

[11] See William J. Baumol, John C. Panzar, and Robert D. Willig, *Contestable Markets and the Theory of Industry Structure*, revised edition, New York: Harcourt Brace Jovanovich, 1988.

and performance (of *any* carrier) will remain whether market share is measured in terms of revenue, lines, or capacity. However, it is worth noting that, as far as market share measures go, the most faithful representation of market structure comes not from revenue or line share measures, but rather from capacity share measures. A market share analysis based on *lines* (such as in the FCC's survey report) is more likely to overstate concentration—and understate competition—in the market because a disproportionately small percentage of access lines may account for a disproportionately large percentage of revenues, particularly in light of the known fact that competitors tend initially to concentrate on securing the business of large, high-volume customers to the neglect of smaller customers. Therefore, in the early aftermath of the opening of a market to competition, conventional market share analysis tends to overstate the degree to which the market is actually concentrated and the exercise of market power that is actually possible.

The U.S. Department of Justice has recognized in its Horizontal Merger Guidelines that market shares should be calculated using the best indicator of firms' future competitive behavior. For differentiated products, sales revenues are a better indicator while, for undifferentiated products, physical capacity is a more suitable indicator. Capacity should be understood as the stock of productive facilities rather than the access lines over which customers receive services. Capacity refers to how quickly service provision can be expanded; access lines provide no such information. Therefore, measuring market share in terms of capacity or the stock of productive facilities, rather than lines or revenues, gives a more reliable predictor of the firm's future (strategic) behavior. The capacity-based share measures the total volume of output that the firm's installed productive facilities could

produce. For this reason, a firm's capacity is a determinant or driver of outcomes such as the number of lines sold or revenue dollars earned. Larger capacity usually translates into an ability to serve greater volumes of existing or new demand. The capacity share measure is sometimes depicted directly in terms of the size of the facilities themselves (e.g., the number of route-miles of installed fiber from which various services could be provided). CLECs tend to have relatively more fiber deployed in their networks than ILECs; hence, measures of line and capacity market share are quite likely to diverge.

Q. HAVE PARTIES IN THIS PROCEEDING TAKEN POSITIONS ELSEWHERE THAT ARE CONSISTENT WITH YOUR APPROACH TO ASSESSING COMPETITION AND USING MARKET SHARE ANALYSIS?

A. Yes. In other proceedings, AT&T—which is a CLEC in this proceeding— has, through a variety of economic experts, acknowledged the limitations of market share analysis and argued against using it for predicting the incumbent's market conduct. These experts testified that if new entrants can provide substitutes and expand rapidly, then those carriers can prevent an incumbent with a high market share from exercising market power. They also emphasized that regardless of its market share, the incumbent's market power will be constrained if entry barriers are low. AT&T has also argued that, to the extent that market concentration is relevant, it should be measured using the relative capacities of the competitors in the market, not their shares of recent revenues or output.

The FCC summarized AT&T's position in the so-called Non-Dominance proceeding as follows:

AT&T contends that market share alone is not a valid measure of market power

in any aspect of the interexchange market because: (a) competitors' excess capacity constrains AT&T's ability to restrict output; and (b) AT&T's aggregate share does not reflect the extraordinary amount of consumer "churn" currently occurring in the marketplace. Thus, AT&T argues that market share figures based solely upon output—rather than on total available capacity—distort the importance of market share as an indicator of market power... [12]

Drs. Mayo and Kaserman noted on behalf of AT&T that:

…information that, in some cases, might be contained in a market share number at a specific point in time is diluted substantially by the fact that AT&T began the post-divestiture period with an inherited high [market] share. The competitive significance of a market share number…stems from a firm's ability (or lack thereof) to *retain* a given market share in the wake of an attempt to raise prices to above-competitive levels.

…the presence of a high market share at a given point in time provides no information on the incumbent firm's vulnerability to market share losses.[13]

…market share is one of the economic determinants of market power, it cannot by itself demonstrate that a firm has significant control over market price. The other economic determinants, such as entry conditions, must also be conducive to providing such control.[14]

It is important to understand that a firm cannot hold significant market power unless it has a large market share and other firms' supply responsiveness is low. That is either a low market share or a high responsiveness of other firms' supply to price changes means that the firm is facing effective competition. Is [sic] market share is low, significant market power cannot exist even if the responsiveness of other firms' supply to price changes is limited. *Conversely, where other firms' supply is highly responsive to price changes, an individual firm cannot possess significant market power even it holds a very high share*.[15]

The FTC further notes that, "[t]he issue of entry barriers is perhaps the most important qualitative factor, for if entry barriers are very low it is unlikely

[12] "Motion of AT&T Corp. to be Reclassified as Non-Dominant Carrier," FCC 95-427, October 23, 1995, ¶42, citing AT&T Ex Parte Filing, April 24, 1995, at 30-35.

[13] David Kaserman and John Mayo, "Is AT&T Dominant? An Assessment of the Evidence," June 1995, Attachment to AT&T Ex Parte letter from Charles L. Ward to William C. Caton, CC Docket 79-252, at 13.

[14] *Id*., at 1. Emphasis added.

[15] *Id*., at 14. Emphasis added.

market power…will persist for long."[16]

AT&T has acknowledged elsewhere that there is no clear theoretical or empirical link between the degree of concentration and the intensity of competition in a market. One AT&T witness argued:

> … the link between market concentration and market competitiveness is a tenuous one, and that measuring concentration is not a substitute for analyzing the factors that determine market performance. … It is widely recognized that a firm's market power depends on whether rivals can supply defecting customers without significant increases in marginal cost and on whether consumers regard the products of other firms as good substitutes. [17]

He also argued (as I do in my testimony) that capacity is the proper basis for measuring and analyzing market share.[18]

Q. BEYOND HIS MARKET SHARE ANALYSIS, MR. GILLAN ATTEMPTS TO MAKE THE CASE [AT 19-22] THAT BELLSOUTH'S SGAT RATES FOR UNES ARE SO UNFAVORABLE TO CLECS THAT, IF BELLSOUTH WERE TO ATTEMPT SERVING THE MARKET TODAY AS A CLEC, IT WOULD FIND ITS PROFITS SHRINKING DRAMATICALLY. DO YOU AGREE WITH HIS ANALYSIS?

A. No. The bulk of Mr. Gillan's case in this regard is made in his Table 6 which purports to be a hypothetical income statement for a BellSouth that operates in Kentucky solely by leasing UNEs from some other source. To this end, Mr. Gillan replaces BellSouth's own

[16] *Id*., at 15.

[17] Statement of Stanley M. Besen, Reply Comments of American Telephone and Telegraph Company, CC Docket No. 90-132, September 18, 1990, Appendix B, at 2-3 (footnotes omitted).

[18] *Id*., at 3-4.

embedded costs of operating its network with the payments Mr. Gillan estimates BellSouth would make for leased UNEs sufficient to serve the current level of demand. This analysis is problematic from several standpoints.

First, the entire analysis rests on a number of assumptions which are either specious or unsupported, or both. To begin with, I find it inconceivable that *any* local exchange carrier would attempt to serve BellSouth's current level of demand in Kentucky by using UNEs alone, i.e., with no facilities of its own. Also, Mr. Gillan does not explain (beyond claiming they were "developed") where the assumptions underlying usage by the "average user" came from [at 20, fn. 30]. Nor does he provide any basis to calculate or verify the claimed level of UNE lease payments of almost $507 million [at 21, Table 6]. These omissions make it impossible to determine whether Mr. Gillan's calculations are even remotely correct.

Second, suppose UNEs are priced at forward-looking total element long run incremental cost ("TELRIC") and assume BellSouth replaced its own network with the UNEs needed to serve current demand. In theory, BellSouth's *forward-looking, economic* network costs would fall by the product of its volumes and its UNE rates, which would just offset its new cost of purchasing UNEs, given by the product of its volumes and its UNE rates. The net effect of this thought-experiment would be no change in costs and no change in net revenue. Thus, if we assume Mr. Gillan's calculations were correct with regard to

- his price-out of the TELRIC of the UNEs necessary to provision BellSouth's volume of usage services in Kentucky, and
- his measure of depreciation and network operating expenses associated with the provision of usage services in Kentucky,

then all we could conclude from Mr. Gillan's demonstration—at best—would be that forward-looking costs such as TELRIC differ from embedded costs. Since BellSouth and CLECs compete in the market on the basis of forward-looking economic costs—not embedded costs—Mr. Gillan's demonstration—even if correct—tells us nothing about the ability of a CLEC to compete with BellSouth at TELRIC-based UNE prices.

Mr. Gillan's demonstration raises an additional red flag. The TELRIC of a network element is generally thought to be less than its embedded cost because, by design, TELRIC reflects more efficient choice of technology and a perfectly efficient network design and provisioning. Thus, Mr. Gillan's claim that TELRIC-based UNE rates are much higher than embedded costs must mean that BellSouth's UNE rates are even further above TELRIC levels. However, as I noted above, the Kentucky Commission has scrutinized these TELRIC-based UNE rates in the past and is in the process of doing so again. Either the Commission has erred in this regard in the past, or Mr. Gillan has incorrectly calculated the UNE lease payments entry and/or the embedded costs associated with network usage services in his Table 6. More information on Mr. Gillan's calculations would be needed to determine which of these possibilities is true.

Q. WHAT DO YOU CONCLUDE FROM THIS DISCUSSION?

A. I conclude that whatever the actual market shares of BellSouth and the CLECs in Kentucky as a group may be, the real issue is whether BellSouth, despite its obviously large market presence, is in any position to deter retail competition by raising barriers to entry, primarily at the wholesale level. If the Commission should find that BellSouth has raised no such barriers—and the oversight and rulemaking functions this Commission has exercised in the

past few years have ensured that that is so—then the facts of open local exchange markets and increasing local competition in Kentucky cannot be denied. Also, with valid TELRIC-based rates in effect today for BellSouth's UNEs, the most significant source of entry barriers in Kentucky has been removed. Thus, whatever course local competition takes in Kentucky, Mr. Gillan's concerns about BellSouth's market share should have little or no relevance for determining whether the time has come for BellSouth to receive interLATA authority in Kentucky.

IV. ECONOMIC PERSPECTIVE ON DESIGN OF PERFORMANCE ASSESSMENT PLAN: GENERAL PRINCIPLES

Q. AS A GENERAL MATTER, WHAT FUNDAMENTAL ECONOMIC PRINCIPLE SHOULD GUIDE THE DESIGN OF A PERFORMANCE ASSESSMENT PLAN?

A. The purpose of a PAP should be to induce BellSouth to deliver wholesale service of the desired quality to its competitors, the CLECs. For this, it should provide remedies to CLECs denied wholesale service of the desired quality by BellSouth. However, such a system of remedies should neither compensate CLECs excessively and become a means of their enrichment, nor fail to penalize BellSouth suitably for any economic benefit it derives by failing to deliver service of the desired quality. The fundamental economic principle described below is the basis for striking that balance in the design of a PAP.

Before stating that economic principle, it is important to understand what would constitute a failure on BellSouth's part. A performance or service quality disparity would occur in the following two circumstances:

1. The quality of a wholesale service provided to a CLEC falls short of that provided by

BellSouth to its own retail operations.

2. Where BellSouth does not use a wholesale service in its own retail operations, the quality of the service provided to a CLEC falls short of a predetermined benchmark level.

Whether BellSouth's non-compliance with service quality or performance standards is inadvertent (e.g., due to system malfunctions, breakdowns within the sequence of tasks and operations associated with wholesale services, or pure random variation) or a deliberate act of discrimination (intended to diminish a CLEC's ability to compete in retail service markets) should not be the central issue. Regardless of whether the disparity (or, equivalently, discrimination or non-compliance) is a planned or unplanned outcome, the net financial consequences are likely to be the same. Rather, instead of attempting to assign a motive to BellSouth for an observed performance disparity, a well-designed PAP should focus squarely on distinguishing among performance disparities that are of some economic consequence to CLECs and those that are innocuous.

Accordingly, the fundamental economic principle for designing a PAP is that it should prevent BellSouth from securing any undue economic value or competitive advantage by violating wholesale service quality standards, either inadvertently or otherwise. The optimal PAP would provide the right incentives to BellSouth and protect its competitors without providing them a source of windfall payments. That is, the PAP's penalties would provide the right amount of *deterrence* for acts of discrimination, favoritism, or other unfair strategic acts. A PAP based on deterrence, rather than the payment of punitive damages, would leave BellSouth no better off economically—and the aggrieved CLEC no worse off—than before the performance disparity. Any departure from this principle, such as by setting penalties unrelated to the economic value of the

disparity, could encourage either BellSouth or the CLEC, or both, to act in ways that compromise the PAP itself and reduce economic efficiency and social welfare.

V. OVERALL COMPARISON OF THE COMPETING PERFORMANCE PLANS

Q. BASED ON THE TESTIMONIES OF WITNESSES REPRESENTING BELLSOUTH AND AT&T, WHAT DO THE TWO PERFORMANCE ASSESSMENT PLANS PROPOSED BY THEM HAVE IN COMMON?

A. Both parties agree on the broad design issues for any such plan. First, in accordance with precedents set by FCC rulings and opinions and similar proceedings in other states (most notably, New York), both parties agree on a two-tiered structure of remedies for BellSouth's failure to meet pre-specified service quality standards (parity and benchmarks) when providing wholesale services to CLECs with which it competes at the retail level. Second, both parties agree on the essentials of the statistical methodology to use for detecting compliance with, or violation of, pre-specified performance standards, although they do differ on the level of measurement at which to apply the methodology. BellSouth has proposed transaction-level measurement, while AT&T prefers greater disaggregation and measurement at the level of sub-measures. Third, both parties agree on several operational and implementation details, including (1) identifying a set of performance metrics, (2) determining to whom penalty payments should be made, (3) and adopting self-effectuating remedies.

Q. ARE THERE ISSUES OF DISAGREEMENT BETWEEN THE TWO PARTIES THAT YOU ADDRESS IN YOUR TESTIMONY?

A. Yes. While there are a number of issues on which the parties differ, my purpose in this testimony is to address only the issues of economic significance. These include the following proposals by AT&T:

1. Select a comprehensive set of performance measurements based on sub-measures, rather than transactions. Thus, AT&T supports measurement at a more disaggregated level than BellSouth. [Bursh, at 28]
2. Use a *statistical* decision rule to determine both whether a performance disparity has occurred *and* the size of the penalty if disparity is proved. While the test of performance disparity requires comparing a z-statistic with a critical value, the penalty is computed as a function of the ratio of that z-statistic and the critical value. An escalating scale of penalty payments is based solely on that ratio. [Bursh, at 33-37]
3. Measure the severity of a performance disparity (and set the appropriate penalty) by choosing a value of 0.25 for the "delta" parameter (an item discussed later in my testimony). [Bursh, Exhibit CLB-1 at 9]
4. Impose a procedural cap on BellSouth's annual financial liability for proven performance disparities in Kentucky. [Bursh, at 38-39]
5. Employ an adjustment for market penetration by CLECs. [Bursh, at 37-38]

The rest of my testimony addresses each of these proposals.

VI. EVALUATION OF SPECIFIC PROPOSALS BY AT&T

1. There is no economic justification for measuring performance at the sub-measure level.

Q. WHY IS IT APPROPRIATE, AS BELLSOUTH BELIEVES, TO TEST FOR AND REMEDY PERFORMANCE DISPARITIES AT THE MORE AGGREGATED TRANSACTION LEVEL, RATHER THAN AT THE MORE DISAGGREGATED SUB-MEASURE LEVEL?

A. Ultimately, the answer to this question depends on what a PAP is designed to achieve. If a PAP's purpose is to hold BellSouth accountable for every little "failure" to provide a sub-measure at the desired quality level, regardless of the larger consequences of that failure,

then the more disaggregated approach of AT&T would appear to have merit. Indeed, the manner in which AT&T has structured its proposed remedies, there is the potential for BellSouth to have to make very large remedy payments even with relatively few CLEC transactions. AT&T proposes a maximum penalty of $25,000 for every "severe failure." [Bursh, at 34] Hypothetically, if BellSouth were to register "severe failure" on several sub-measures, then it could find its remedy payments balloon quickly even when those sub-measures make up only a handful of actual CLEC transactions. If enrichment of the CLECs at BellSouth's expense is not the goal of a PAP—as it should surely not be—then the more measured approach to remedies proposed by BellSouth is appropriate.

Instead, if—as I believe it should be—the PAP's purpose is to ensure that BellSouth provides wholesale *services*, not just individual *functionalities*, at parity so that CLECs can compete for customers and provide matching services, then BellSouth's proposed more aggregated approach makes more economic sense. Whether BellSouth falls short or exceeds the quality standard for each and every sub-measure or functionality is less important than whether the wholesale services—which those sub-measures and functionalities collectively make up—meet quality standards set for them. Only if a performance failure for a single sub-measure were likely to cause a performance failure for the CLEC transaction as a whole, would it make sense to conduct tests and pay remedies at the sub-measure level.

2. There is no economic justification for applying a statistical decision rule used to detect performance disparities to the purpose of setting remedies as well.

Q. DO YOU ACCEPT THE STATISTICAL METHODOLOGY (BASED ON THE Z-

SCORE) PROPOSED BY BOTH PARTIES FOR DETECTING PERFORMANCE DISPARITIES OR ACTS OF DISCRIMINATION?

A. Yes. Both BellSouth and AT&T agree that, because of inherent randomness, it is preferable to identify violations of standards for performance measures with retail analogs using a statistical decision rule. To this end, AT&T has proposed a version of the z-statistic called the "modified z-score" [Bursh, Exhibit CLB-1 at 7; Bell, at 28 and Exhibit RMB-4], while BellSouth's proposed version of that statistic is the "truncated z-score" [Direct Testimony of Alphonso J. Varner, Exhibit AJV-3; Direct Testimony of Edward Mulrow, at 4-6]. These statistics are fairly similar and the differences between them are explained in the testimonies of Dr. Bell and Dr. Mulrow.

Q. IS THIS METHODOLOGY THE SAME AS USED IN CONVENTIONAL TESTS OF STATISTICAL SIGNIFICANCE?

A. No, this methodology differs from conventional tests in several important ways. The most important difference is that, unlike a conventional test that fixes the probability of Type I error but not that of Type II error, the proposed methodology first selects a critical value for the test that equalizes or "balances" the two probabilities of error. The probability of Type I error is the probability of rejecting a null hypothesis that is true (roughly, the return of a "guilty" verdict when, in fact, the accused is innocent), and the probability of Type II error is the probability of failing to reject a false null hypothesis (roughly, the return of a "not guilty" verdict when, in fact, the accused is not innocent). In this context, Type I error favors a CLEC but punishes BellSouth in error, while Type II error favors BellSouth and denies a CLEC just compensation in error.

In a conventional test, it is customary to first "fix" the probability of Type I error at an "acceptable" level, e.g., 5 percent, and then conduct the test without making any attempt to control for the probability of Type II error. The most useful technique available at that point to minimize the probability of Type II error is to make the sample size as large as possible. A less useful technique is to exploit the trade-off between the probabilities of the two types of error and to tolerate a higher probability of Type I error in return for a lower probability of Type II error. As far as I know, the proposed truncated z-statistic makes the first attempt to conduct a test of statistical significance in a manner that equalizes (balances) the probabilities of the two types of error. The motivation for this comes from the desire to hold the risk of Type I error (which would favor the CLEC at BellSouth's expense) at exactly the same level as the risk of Type II error (which would favor BellSouth at the CLEC's expense).

The second difference is that the proposed test of statistical significance also builds in the added element of materiality. It does so by requiring that the disparity not only be statistically significant but also exceed a certain predetermined level to be considered material.[19] In effect, the proposed statistical test is a joint test of statistical significance and materiality. For example, suppose the average response time for a certain function provided to a CLEC is *x* minutes while it is *y* minutes when BellSouth provides that

[19] This introduction of materiality necessarily comes about because Type I and Type II error rates must be balanced for a *particular* deviation from the null hypothesis of non-discrimination (i.e., no performance disparity). If the alternative hypothesis is far from the null (corresponding to a high degree of disparity or discrimination), the corresponding balanced Type I and II error rates will be small. If the alternative hypothesis is close to the null (corresponding to a small amount of disparity or discrimination), the associated balanced Type I and II error rates will be large. Materiality must be used to determine the degree of discrimination or performance disparity at which it is appropriate to balance Type I and II error probabilities.

function to its own retail operations. Now, suppose that *y* is less than *x*, i.e., there is at least *prima facie* evidence of a performance disparity favoring BellSouth's retail operations at the CLEC's expense. The purpose of the statistical test using the truncated z-statistic would then be two-fold:

1. Determine whether the difference *y –x* is *statistically significant*, i.e., whether that difference is genuine in the sense that it may be expected to happen overwhelmingly often in repeated trials (say, 95 times out of 100) or is simply a random and infrequent event.
2. Determine whether the difference *y –x* is *material*, i.e., whether that difference is large enough to have real or significant financial consequences for both BellSouth (which gains) and the CLEC (which loses).

To accomplish the latter, BellSouth proposes that *y* and *x* be separated by a pre-set amount before that difference is considered material. The separation amount in question is a parameter delta multiplied by the standard deviation of response times when BellSouth serves its own retail operations. In conventional tests of statistical significance, materiality is not a factor. Therefore, a parameter like delta is not needed in such tests. But, in tests employing the truncated z-score and a balancing critical value, delta becomes an important choice, one (as I explain later) to be made with a judicious blend of economic, business, and statistical judgment. The testimonies (and attachments thereto) of Mr. Varner, Dr. Mulrow, Dr. Bell, and Ms. Bursh all explain how the choice of delta affects the statistical tests, thus making it unnecessary for me to dwell any further on that matter.

Finally, a statistical test based on the truncated z-statistic differs by having a built-in asymmetry that is not present in a test based on the conventional z-statistic. To understand this point, refer again to the example above of response times on a specified function when BellSouth serves a CLEC as opposed to when it serves its own retail operations. There are

likely to be occasions when the quality of service BellSouth provides the CLEC exceeds the quality it provides its own retail operations. Conversely, there are likely to be other occasions when just the opposite is true. The *average* performance by BellSouth in this regard would ordinarily account for both better-than-expected performance as well as worse-than-expected performance. However, BellSouth's proposed truncated z-statistic is asymmetric in that it only considers worse-than-expected performance; all instances of better-than-expected performance are, in essence, set to zero. The final outcome is a measure of performance disparity whose severity depends on the size of each individual worse-than-expected performance. In effect, this type of truncated accounting of BellSouth's performance gives it no credit for delivering better-than-expected performance but holds it accountable for all instances of worse-than-expected performance. In contrast, a statistical test using the conventional z-statistic—which neither party has proposed to use here—would account for both types of performance.

Q. DOES AT&T'S MODIFIED Z-STATISTIC GIVE BELLSOUTH CREDIT FOR BETTER-THAN-EXPECTED PERFORMANCE?

A. No. Although AT&T's witnesses in this proceeding do not offer testimony on this point, AT&T claimed in a recent Florida proceeding that giving BellSouth credit for better-than-expected performance would enable BellSouth to "game the system." [Direct Testimony of Cheryl Bursh, Exhibit CLB-1, at 39-40, Florida Public Service Commission Docket No. 000121-TP] Apparently, BellSouth would do this by balancing worse-than-expected performance for some functions against better-than-expected performance for other functions and thus escaping penalties for performance disparities or discriminatory acts,

regardless of the harm caused to the CLEC's ability to compete. In instances in which BellSouth provides better-than-expected service, the benefit to the CLEC may not be ephemeral as AT&T seems to suggest. If such service helps an CLEC to win over a customer from BellSouth, then it may take several mis-steps by the CLEC for that customer to consider switching back to BellSouth or some other CLEC. It is important to remember the central underlying economic issue in this proceeding: the more meaningful service quality-based competition is for the customer, rather than for any individual service.

Q. SHOULD A STATISTICAL DECISION RULE BE EMPLOYED FOR BOTH DETECTING PERFORMANCE VIOLATIONS *AND* DETERMINING THE SEVERITY OF THOSE VIOLATIONS FOR THE PURPOSES OF SETTING REMEDIES?

A. No. A statistical decision rule may only be used for the first purpose, i.e., to *detect* performance disparities that are material in some sense. It may not be used for determining the severity of those violations because the z-score and similar test statistics are designed only to indicate whether a particular statistical hypothesis is true or false, not how true or how false or what the economic significance of a given deviation from the null hypothesis might be. In other words, a statistical decision rule like the z-score can only provide an absolute diagnosis, not a relative one and, therefore, may not be used for setting remedies. As I explain below, the setting of remedies should depend on both the type and the severity of the performance disparity.

Q. CAN YOU EXPLAIN WITH AN EXAMPLE THE LIMITATION OF THE Z-

SCORE FOR DETERMINING SEVERITY AND SETTING REMEDIES?

A. Yes. Suppose a z-score is computed for the same performance metric in two successive months, and in both months the outcome (an observed departure from parity) is found to be statistically significant. Next, suppose the z-score in the second month is twice as distant from a pre-specified critical value than that in the first month. Can it be inferred that the economic significance of the observed departure from parity is twice as great in the second month as in the first month, or that the penalty should be twice as large in the second month? The answer, in general, is "no." The reason is that the z-score has several ingredients (e.g., the mean performance when BellSouth serves itself, the mean performance when BellSouth serves the CLEC, the standard deviations for both, and the number of measurements made in each case). Changes in any of these ingredients can influence the realized value of the z-score. Therefore, a z-score that is twice as distant from a critical value than another could easily be so for reasons other than simply that one of the performance means is twice as large as the other. For these reasons, it is improper to use the same statistical decision rule that determines whether or not an outcome is statistically significant to also compare the economic significance of different outcomes or set remedies.

Q. DOESN'T THE DELTA PARAMETER ALREADY FACTOR MATERIALITY OR ECONOMIC SIGNIFICANCE INTO THE Z-SCORE? IF IT DOES, SHOULDN'T THIS THEN PERMIT SETTING REMEDIES BASED ON THAT Z-SCORE (OR SOME FUNCTION OF IT)?

A. Yes, the chosen value of delta reflects what level of observed disparity would be

considered material or economically significant. However, that is *not* sufficient, in and of itself, to determine what penalty should be paid in any given instance. In other words, the use of delta draws a dividing line between observed disparities that are material and those that are not. That says nothing, however, about how severe a particular material performance disparity is, or what level of penalty ought to apply to it. Once that materiality threshold is crossed, the disparity can be thought of as generating economic value for BellSouth that it would not otherwise receive. Correspondingly, there is an economic opportunity cost to the CLEC that receives disparate service from BellSouth. However, whether that economic value would be considered relatively small, moderate, or large depends entirely on the function performed by BellSouth for the CLEC. Not all functions or performance metrics have the same economic value; nor does that economic value change with time for all functions or performance metrics. Therefore, the severity of a disparity is not simply a matter of how long that disparity lasts. Moreover, the level of severity associated with disparities for different performance metrics may itself vary. That is why BellSouth has proposed a fee schedule for different performance metrics, for both Tier 1 and Tier 2 penalties. [Varner Exhibit AJV-3]

3. There is no economic justification for setting remedies and penalty payments in the manner proposed by AT&T.

Q. DO YOU AGREE WITH AT&T'S PROPOSAL [BURSH, EXHIBIT CLB-1] TO CALIBRATE THE SEVERITY OF PERFORMANCE DISPARITIES BY USE OF THE Z-SCORE?

A. No, for the reasons explained above, a statistical decision rule based on the z-score may not

be applied to the tasks of determining the severity of performance disparities and setting remedies. This fact has been recognized elsewhere as well. For example, Administrative Law Judges in Pennsylvania evaluating competing PAP proposals from Bell Atlantic-Pennsylvania and other parties including AT&T and MCI WorldCom, rejected the idea of using the z-score for both purposes.[20]

Besides representing an improper use of statistics, AT&T's proposed methodology also attempts to equate the degree to which a z-score differs from a critical value with the economic importance of an observed performance disparity. By using labels such as "Basic Failure," "Intermediate Failure," and "Severe Failure," AT&T obviously wishes to convey a sense of how economically or financially important an observed "failure" is. The best that the statistical decision rule proposed in this proceeding can do, however, is only indicate whether an outcome is—from a statistical standpoint only— a "success" (i.e., compliance) or a "material failure." Such a rule may indicate that a particular failure crosses some pre-specified level of materiality, but it *cannot per se* determine the relative severity of that failure, i.e., just how material it really is. Ultimately, the question that must be answered is: what economic value does BellSouth stand to gain from a specific performance disparity or act of discrimination on a specific performance metric? The statistics-based rule proposed by AT&T does not answer this question.

[20] Before the Pennsylvania Public Utility Commission, Joint Petition of Nextlink Pennsylvania, Inc., RCN Telecommunications Services of Pennsylvania, Inc., Hyperion Telecommunications, Inc., ATX Telecommunications, Focal Communications Corporation of Pennsylvania, Inc., CSTI, Inc., MCI Worldcom, E. Spire Communications, and AT&T Communications of Pennsylvania, Inc. for an Order Establishing a Formal Investigation of Performance Standards, Remedies and Operations Support Systems Testing for Bell Atlantic-Pennsylvania, Inc., Docket No. P-009991643, Recommended Decision, August 6, 1999, at 206.

Q. DO YOU ACCEPT AT&T'S PROPOSAL OF AN ESCALATING SCALE OF PENALTY PAYMENTS TO MATCH ITS CHOICE OF AN ESCALATING SCALE OF PERFORMANCE DISPARITIES?

A. No. The remedies or penalty payments proposed by AT&T are arbitrary and capricious. First, they are suggested without regard to specific characteristics of the underlying performance metrics or transactions. That is, they are "one size fits all," suggested without any regard to what functions the different performance metrics perform or whether they contribute equally to a CLEC's ability to provide service or compete. For example, suppose that the "parity gap" (expressed as a difference between the z-score and the balancing critical value) is the same for two different performance metrics. Should we then conclude that the economic value to BellSouth of the two performance disparities is *identical*? While the rules proposed by AT&T would imply that to be the case, such an implication is clearly absurd. The parity gap simply cannot be compared in any meaningful way across different performance metrics.

Second, the proposed penalty rules (e.g., AT&T's quadratic penalty function) are clearly designed to produce penalties that themselves escalate to match an escalating scale of performance disparities. In its eagerness to generate that match, however, AT&T has neglected to explain why such a system of remedies makes economic sense. Does the economic value to BellSouth of a performance disparity in its favor change in the manner implied by the mathematical rules proposed by AT&T? If the purpose of a well-designed, deterrence-focused PAP is to provide incentives to BellSouth to meet pre-set performance standards, then why is the proposed set of penalty rules the right way to go about

dissuading BellSouth from providing service of lower quality to CLECs? Will the penalties, as calculated according to AT&T's proposed rules, exactly offset any economic gain from discrimination or could they provide unwarranted revenues to the CLECs themselves? AT&T has not given us reasons to believe that its proposed penalty rules can answer these questions. Ms. Bursh states [at 25-26] that "[r]emedies must be great enough to motivate BellSouth to meet its obligations under the [1996] Act to provide nondiscriminatory access to services and facilities." Besides emphasizing that penalties ought to be "great enough," Ms. Bursh provides no insight into how the remedies proposed by AT&T would provide BellSouth the motivation to which she refers.

Q. IDEALLY, HOW SHOULD VARIOUS LEVELS OF PENALTY PAYMENTS BE SET?

A. Assuming that the public policy goal is to provide BellSouth a greater economic incentive to comply with performance standards than not to comply, the size of the penalty payments should vary directly and proportionally with the economic severity of the performance disparity. Equating more serious performance disparities with more severe economic consequences (i.e., greater economic value or competitive advantage for BellSouth and the opposite for CLECs), the ideal system of penalties should be calibrated to the economic seriousness of the performance disparities. However, just as a statistical decision rule is not appropriate for creating such a system, it is also not always possible to determine accurately the economic importance of every performance disparity. This is a problem arising from the lack of the necessary information and experience, not from any infirmity in the use of economic principles for setting penalties. Therefore, the estimates of the

economic value in question are initially based mostly on business judgment; subsequently, those estimates are revised as warranted by experience with the effectiveness of penalties in deterring performance disparities.

For this reason, BellSouth's multi-pronged approach is, in my opinion, both practical and reasonable for the current environment. In this approach, the first step is to design the statistical test for detecting performance disparities to catch only the disparities that meet at least a minimum materiality threshold. On this point, there is general agreement among all parties, except that the delta parameter—needed to implement the materiality threshold—is still a matter of contention among those parties.

The second step is to determine what proportion of transactions (in serving CLECs) is likely to have suffered from statistically significant and material performance disparities and is, therefore, eligible for compensatory penalty payments. Among all the parties, only BellSouth makes an attempt to determine that. The procedure for this is explained and demonstrated in the testimonies of Dr. Mulrow and Mr. Varner. It was also accepted conditionally for a trial period of six months by the Staff of the Louisiana Public Service Commission during a similar proceeding in Louisiana.

The final step is to multiply the number of affected transactions by a per-transaction penalty or "fee" from a fee schedule. [Varner Exhibit AJV-3] Thus, the remedy that applies in any given instance depends in part on an estimate of the affected volume of transactions and in part on a penalty level chosen to reflect the likely economic value to BellSouth of the performance disparity on a particular performance metric.

Q. HOW IS BELLSOUTH'S PROPOSED PENALTY SYSTEM SUPERIOR TO THAT

PROPOSED BY AT&T?

A. Unlike AT&T, BellSouth does not—correctly, in my opinion—propose a set of penalty payments that escalate according to a pre-specified mathematical function of the statistical decision rule used to detect performance disparities. This avoids the false correspondence between the statistical decision rule statistic and the economic significance of—and penalties for—observed performance disparities. Moreover, BellSouth proposes penalties that are specific to each performance metric and transaction. In contrast, AT&T's proposal is arbitrary, unrelated to performance metrics or transactions, and unrelated to the economic importance of observed performance disparities.

Q. ARE YOU SUGGESTING THAT BELLSOUTH'S OWN PROPOSED PENALTIES ARE NOT ARBITRARY?

A. On balance, yes. While BellSouth's plan may not be perfect, it falls much lower on any scale of arbitrariness than does AT&T's plan. Performance measurement and PAPs are very new to the telecommunications industry. The need for such PAPs—at the current comprehensive level of detail—only surfaced after the passage of the 1996 Act. In particular, valuable experience and insight into the design of such plans are being gained as the Regional Bell Operating Companies pursue the process of securing Section 271 (interLATA long distance) authority. With few tried and tested blueprints or grand designs to work from, and significant variations among the plans that have been adopted in the handful of states to have received Section 271 authority so far, carriers and regulators alike have explored the structure and purpose of PAPs from various angles. While there is still no major or reliable empirical record on how effective those PAPs are, it is possible to

bring reasoned judgment to any assessment of the proposed plans based on what *is* known so far.

The BellSouth plan proposes penalty payments based on (1) the type of underlying transaction, (2) the estimated economic seriousness of the violation, and (3) the duration of the violation. While there may be room for revision of the specific levels of the proposed penalties—by transaction—over time as carriers and regulators gain more experience in this regard, there is no denying that AT&T's plan makes no attempt to match the comprehensive detail that is in BellSouth's proposed plan. In contrast, AT&T's plan is arbitrary in two essential respects: (1) it relies on statistical, rather than on economic, criteria for determining the severity of a performance disparity, and (2) it treats all transactions or performance metrics alike by failing to link the size of the penalty to the likely economic harm resulting from a disparity.

Q. PLEASE INDICATE WHERE OPPORTUNITIES WOULD ARISE FOR REVISION WITH MORE EXPERIENCE.

A. Two important areas in which revision may be needed—and would be possible—as the chosen PAP is reviewed in the future include (1) the choice of delta and (2) the schedule of fees or penalty payments. Because of a lack of historical precedents or analogs from other areas of BellSouth's operations or regulatory obligations, current choices made with respect to both must necessarily be tentative and subject to review. To this end, BellSouth has already proposed to conditionally use a delta of 1.0 for Tier 1 remedies and 0.5 for Tier 2 remedies for a period of six months from the point a PAP is adopted in Kentucky. [Varner, at 87] Similarly, BellSouth has proposed two tables of penalty payments

(corresponding to Tier 1 and Tier 2 remedies) to be used to calculate actual compensation for CLECs that receive disparate service. The proposed payments reflect BellSouth's best business judgment at this time of the economic value, for each performance metric, of disparities that last for one month or more. With experience of how each type of performance disparity unduly contributes economic value to BellSouth, the opportunity may arise to fine-tune those proposed penalties as well.

Q. IN WHAT SENSE WOULD YOU CONSIDER BELLSOUTH'S CONDITIONAL CHOICES OF DELTA FOR TIER 1 AND TIER 2 REMEDIES TO BE REASONABLE?

A. There is near-universal agreement that while delta is itself a statistical parameter, the value that is chosen for it should be based on business knowledge and telephony considerations. [Bell, at 34; Mulrow, at 17] In choosing delta, we must also consider the reasonableness of the statistical implications of that choice. This suggests that whatever delta is chosen for now must necessarily be an educated guess, whose statistical and business implications need to be followed closely.

BellSouth's proposal for a delta of 1.0 for Tier 1 remedies and 0.5 for Tier 2 remedies is countered by AT&T's proposal that delta not exceed 0.25. Whether or not these proposed values make sense from a business (or telephony) standpoint is hard to determine currently. Obviously, the lower the value of delta, the quicker the materiality threshold will be reached and a performance disparity that crosses that threshold will become a reason for the payment of penalties. Framing the debate over delta in this light, Dr. Bell argues that BellSouth has a natural interest in asking for a "high" value while

CLECs have a natural interest in asking for a lower value.

> When delta is large, the balancing occurs at a more extreme degree of observed disparity. BellSouth wants a large delta because this means a smaller probability of Type I error and hence, larger probability of Type II errors for any given degree of true disparity. The CLECs want a value of delta that protects them against any degree of disparity that would pose a material obstacle to competition. [Bell, at 34]

The problem with this explanation, as I see it, is threefold. First, it presents the issue as a matter of knowing with perfect certainty that BellSouth's sole purpose is to exploit every opportunity to discriminate, including by selecting a "high" delta and, therefore, the Commission's role is essentially one of playing policeman by siding with AT&T's demand for a "low" delta. If the Commission must play policeman in this matter, then it must also recognize the opposite economic incentive that exists, i.e., that of CLECs receiving unwarranted penalty payments from BellSouth as delta is selected low enough to make even small performance disparities appear material.

Second, Dr. Bell disregards the fact that what happens to the statistical test of performance disparity depends at least as much on the sample size (i.e., the number of CLEC transactions) as it does on the chosen value of delta. True, the balancing critical value is higher as delta gets larger (implying that the materiality threshold becomes more distant), and the implied Type I and Type II error rates get smaller. This is the effect to which Dr. Bell refers as balancing occurring at "a more extreme degree of observed disparity." However, for any *fixed* value of delta, the same phenomenon occurs as sample size increases, i.e., more and more CLEC transactions are included in the test for disparity. CLEC witnesses are concerned about this effect because the approach they advocate for determining remedies—based on sub-measures rather than transactions—will naturally

cause sample size (here, the number of sub-measures recorded) to be quite large even for CLECs of small or moderate size. Conversely, since BellSouth proposes to determine remedies at the transaction—rather than the sub-measure—level, the sample size (here, the number of transactions recorded) may naturally be quite small even for CLECs of moderate or large size. Therefore, a "small" delta in these circumstances could cause even fairly small observed disparities to be found material and subject to penalty payments, and for Type I and Type II error rates to be quite high. Under these circumstances, it is perfectly reasonable for BellSouth—within its proposed scheme of things—to opt for a higher delta than would be acceptable to AT&T.

Third, this explanation appears to ignore the salient characteristic of testing with balancing—that Type I and Type II error probabilities are not only equalized (so neither BellSouth nor the CLEC is better or worse off relative to each other) but they also go up and down together. So, if a large delta, particularly with large samples, seems to lower the Type I error rate almost to zero (which favors BellSouth), then so does it lower the Type II error rate almost to zero (which favors CLECs).

In sum, as explained more fully by Dr. Mulrow, the choice of delta is more than simply a matter of preventing BellSouth from discriminating. A number of factors besides delta affects the quality of the statistical test of detection or the calculation of remedies. The Commission should see the full picture in this regard, rather than be distracted by alarmist claims about the damage that BellSouth could do CLECs if granted a "high" value of delta. Instead, as accepted by the Louisiana Public Service Commission, this Commission should accept conditionally the range for delta proposed by BellSouth, and

make suitable revisions following a review of results after a suitable period like six months. From that standpoint, BellSouth's proposed course of action looks eminently reasonable.

Q. SHOULD DELTA PLAY A LEADING ROLE IN DETERMINING TIER 1 AND TIER 2 REMEDIES?

A. No. In AT&T's proposed rules for setting remedies, delta plays a prominent if somewhat hidden-from-view role. The choice of delta determines in part the balancing critical value; in turn, that balancing critical value is an important part of the statistical decision rule that determines the level of penalties. For reasons explained above, that approach to setting remedies is flawed. Instead, BellSouth relies more on its proposed fee schedule (which putatively measures the economic value of different performance disparities) to determine the final penalty payments. To the extent BellSouth uses the parity gap (which, in itself, depends on delta) to determine the number of transactions eligible for penalty payments, there is an unavoidable connection to delta. However, that connection is nowhere nearly as pervasive as it is in AT&T's approach to setting remedies.

Q. DR. BELL PROVIDES AN EXAMPLE [AT 34-36] OF THE CONSEQUENCES OF CHOOSING DIFFERENT VALUES OF DELTA FOR THE LEVEL OF DISPARITY AND ITS MATERIAL IMPACT ON COMPETITION. WHAT DOES THAT EXAMPLE ADD TO THE DISCUSSION ABOUT HOW DELTA SHOULD BE CHOSEN?

A. Not much. Dr. Bell's obvious point is that associated with every choice of the value of

delta is a threshold level of departure from the level of performance that BellSouth's own customers enjoy, and that any specific value of delta should be considered acceptable only *if* that threshold departure from BellSouth's performance is not considered a material threat to competition. Unfortunately, Dr. Bell's point is very much an artifact of the example (and the assumed values for the mean and the standard deviation) that he has chosen to provide.

Dr. Bell's Table 1 (based on an assumption of a mean of 5 days and a standard deviation of 5 days for the distribution of the Order Completion interval among BellSouth's own customers) is designed to show that the disparity level varies with the value of delta chosen. This is not surprising because that disparity level is constructed as the product of delta and the standard deviation. Thus, the disparity is higher for a higher delta, and lower for a lower delta. If, as constructed, the CLEC mean is the BellSouth mean plus the disparity, then obviously the CLEC mean would move further away from the BellSouth mean as delta increased in value. Dr. Bell then asks the Commission to judge whether that increasing disparity (as delta increases) would not be considered a material threat to competition:

> A value of delta equal to 0.50 would be justified only if any disparity of less than 2.5 days is judged *not* to pose a material impact on competition. A delta of 1.00 would be justified only if any disparity of less than 5 days is judged *not* to pose a material impact on competition—i.e., only if a 100 percent increase in the order completion interval was judged to be immaterial. [Bell, at 35; emphasis in original]

Dr. Bell fails, however, to point out two very important properties of the relationship between delta and the disparity level.

First, in judging whether any disparity of less than 5 days poses a material impact on

competition, the Commission must take into account the fact that under Dr. Bell's hypothetical assumptions,

- about 16 percent of BellSouth's own retail customers would also experience installation intervals greater than 10 days, and
- about16 percent of the CLEC's customers would experience installation intervals shorter than 5 days.

This distribution assumes that interval data are normally distributed with mean 5 and standard deviation 5. The actual distribution would be truncated normal since the interval in question cannot be less than zero; the effect of truncation would be to increase the proportion of BellSouth customers who experience intervals greater than 1 standard deviation from the mean.

By assuming the standard deviation is large relative to the mean, Dr. Bell guarantees that any allowed disparity (delta times the standard deviation) is large relative to the mean and would appear to have competitive significance. However, assuming a large standard deviation implies that a large fraction of BellSouth customers would also experience substandard service intervals, which would offset the competitive significance of any assumed value of delta.

Second, Dr. Bell's claim of materiality is obviously as much an artifact of his assumed standard deviation as of the parameter delta. Suppose instead of 5 days, the standard deviation were 0.5 days. With an assumed standard deviation of 0.5 days, the disparity threshold would vary from 5.125 days at a delta of 0.25 to 5.5 at a delta of one. Re-asking Dr. Bell's question: is a disparity of 3 hours (i.e., 0.125 days) competitively significant when the average interval is 120 hours and when more than 16 percent of

BellSouth's retail customers experience disparity greater than 12 hours? The point of Dr. Bell's example is, thus, equally an artifact of his assumptions about the standard deviation as about delta.

The overarching feature of the exercise in Dr. Bell's Table 1 is that it is entirely *statistical*. No information regarding the competitive significance of discriminatory treatment is brought to the analysis, so nothing useful can be determined regarding appropriate values of delta. In Tables 1 and 2, Dr. Bell illustrates different aspects of the statistical measures of disparate treatment that would be a component of an analysis of competitive significance, but the illustrations (1) depend on parameters other than delta and can be misleading and (2) stop short of quantifying commercial significance.

Q. DR. BELL ALSO COMPARES [AT 35-36] HOW THE CHOICE OF DELTA AFFECTS THE PERCENT OF CLEC CUSTOMERS RECEIVING POOR SERVICE RELATIVE TO THE PERCENT OF BELLSOUTH CUSTOMERS THAT DO. HOW DOES THAT EXAMPLE INFORM THE DISCUSSION OF THE CHOICE OF DELTA?

A. That comparison distorts our perspective as well. Table 2 in Dr. Bell's testimony, in effect, compares the balanced Type I and Type II errors for the BellSouth distribution (under the null hypothesis) with the balanced Type I and Type II errors for the (re-centered) distribution under the alternative hypothesis. That is, the comparison is between a distribution centered at the BellSouth mean with another distribution centered at the likely CLEC mean, where the CLEC mean = BellSouth mean + delta. It can be shown that if the latter distribution is overlaid on the former distribution, then at the balancing critical value

at which a certain percent of BellSouth customers receive poor service, a larger percent of CLEC customers could be expected to receive poor service as well. Table 2 shows that the relative size of those two groups (CLEC customers to BellSouth customers) increases as delta is increased in value. Thus, Dr. Bell claims that with delta=0.25, CLEC customers would experience poor service at five times the rate that BellSouth's own customers would, and with a delta=0.5, that rate would be nearly twelve times.

While it is true that the disparity gap increases mechanically with the value of delta, Dr. Bell's example should be placed in the proper perspective. At delta=0.25, Table 2 shows that 1 percent of BellSouth's customers receive poor service compared with 5 percent of the CLEC's customers, which Dr. Bell characterizes [at 36] as "the CLEC rate is five times the BellSouth rate." While the ratio of the two is indeed five, an equivalent way to look at the competitive significance of this situation is to observe that 95 percent of the CLEC's customers receive satisfactory service, compared with BellSouth's 99 percent, i.e., the CLEC's satisfaction rate is 96 percent of BellSouth's satisfaction rate. While Dr. Bell's Table 2 is designed to suggest that a delta of 0.25 is reasonable because a five-fold difference in service rates would obviously be competitively significant, it is not so obvious that a 4 percentage point difference in service quality would be significant. However, both these pairs of numbers (1 percent BellSouth vs. 5 percent CLEC and 99 percent BellSouth vs. 95 percent CLEC) describe exactly the same situation. Table 2 is thus quite misleading if its intention is to help quantify the competitive significance of different values of delta.

More importantly, Dr. Bell's Table 2, like his Table 1, focuses exclusively on the

effects of varying delta. His inferences about performance disparity are driven, therefore, purely by statistical measures; no effort is made to determine the economic or material significance of disparities. Accordingly, the approach embodied in Tables 1 and 2 is not helpful or sufficient for determining a value of delta for which the commercial gain to BellSouth from unobserved discrimination equal to the product of delta and the standard deviation (a Type II error) is just outweighed by the cost to BellSouth of paying a penalty when it does not, in fact, discriminate (a Type I error).

Q. WHAT ARE THE LIKELY CONSEQUENCES OF SETTING REMEDIES, AS IN AT&T'S PLAN, WITHOUT ANY ACCOUNTING FOR THE LIKELY ECONOMIC SIGNIFICANCE OF PERFORMANCE DISPARITIES?

A. When a performance disparity is proved, the only way to establish the appropriate penalty is to investigate the nature of the disparity itself, specifically the functionality or service that suffered a lapse in performance or quality, and to determine the likely gain to the ILEC (corresponding to the likely loss to the CLEC). As I stated earlier, initial estimates of that gain or loss may need to be based on business judgment, with subsequent revisions being made as experience with the effects of performance disparities accumulates. To use only a blanket statistical decision rule for this purpose, e.g., by "how much" the quality of service provided to the CLEC misses the set standard or benchmark, would jeopardize the objective of measuring accurately the expected gain or loss from the disparity. Furthermore, because a statistical decision rule is often influenced by factors unrelated to either that expected gain or loss, and is beyond the control of one or the other party, it can become subject to abuse when applied to the determination of the appropriate penalty.

One example of the kind of gaming that can arise when the penalty set for a performance disparity is unrelated to the financial importance of that disparity is a class of actions that are described in economics as "moral hazard." Broadly defined, moral hazard is a form of gaming by which one party to a plan or contract may act in ways—within the framework of the existing plan—that allow it to gain an unanticipated competitive or financial advantage at the expense of the other party. The PAP being formulated in this proceeding is by design asymmetric, i.e., all penalties are to be paid *by* BellSouth and *to* the CLECs. Therefore, without protections built into the PAP, there could be a strong incentive for the CLECs to act in ways that raise the risk of default—and loss—to BellSouth.

Q. PLEASE PROVIDE SOME EXAMPLES OF MORAL HAZARD.

A. The following are two examples of moral hazard:

1. A homeowner that insures his home against accidental fire damage may actually raise the risk of such damage by failing to take precautions or to maintain the pre-insurance level of vigilance against accidental fires.
2. A customer that purchases an appliance or automobile under a comprehensive warranty may actually raise the risk of needing repairs by failing to accord the level of care that would have been given without the warranty.

Q. PLEASE INDICATE THE DIFFERENT WAYS THIS MORAL HAZARD-BASED BEHAVIOR COULD MANIFEST ITSELF IN THE PRESENT CONTEXT.

A. The prospect—or promise—of payments in excess of amounts necessary for deterrence could trigger moral hazard-based behavior in at least the following ways:

1. *Reward lack of cooperation.* CLECs could have less incentive to report operational problems to BellSouth in a timely manner. The longer a problem goes uncorrected, the greater would be the compensation available.

2. *Maximize opportunities for unearned income to CLECs.* Reliance on arbitrary rules to set penalties could result in a PAP setting disproportionately severe penalties for relatively minor disparities. However, not every service failure would cause a CLEC customer to permanently change suppliers. Also, the proposed penalties would take effect regardless of whether the fault was BellSouth's, the CLEC's, the customer's, or of no one in particular.

3. *Discourage investment by CLECs.* The opportunities for unearned income could discourage the CLECs from investing in their own facilities, especially if such investment were to cause those carriers to lose a lucrative source of income.

4. *Encourage inefficient entry.* Firms that are inefficient relative to BellSouth could nevertheless see an opportunity to enter the market in the expectation of receiving penalty payments from BellSouth. This would be precisely the same effect that providing a subsidy would have in inducing entry by inefficient firms.

5. *Entrapment by CLEC.* CLECs could have an incentive to force BellSouth into situations of non-compliance. For example, by choosing to provision hard-to-serve end-users, presenting service requests that are calculated to cause bottlenecks and delays in BellSouth's response, or basing service requests on deliberately underestimated service requirements (with a subsequent upward revision in those requests that BellSouth could not possibly fulfill quickly), those carriers could increase the risk of BellSouth's non-compliance.

Q. COULDN'T PROTECTIONS AGAINST SUCH GAMING BE BUILT INTO A PERFORMANCE ASSESSMENT PLAN?

A. Only partially. In apparent recognition of the potential for gaming, Ms. Bursh [at 26] states: "Remedies generated under the enforcement mechanisms should not be allowed to become excessive. The plan must foster competition, not create an economic incentive for CLECs to receive deficient performance." However, in most instances, those protections would not likely be automatic, i.e., moral hazard behavior would first have to be proved through litigation or some contested proceeding. Also, those protections would not suffice for all forms of moral hazard behavior. While the proposed protections are definitely worthwhile, the best protection would be to remove pre-emptively the very incentives that give rise to moral hazard behavior. Again, this means adopting a deterrence-based PAP

which separates the use of statistical decision rules for establishing disparities from the use of economic or financial methodologies to determine the severity of disparities and the penalties appropriate for them. The efficient PAP must minimize the costs of proving alleged disparities and determining their appropriate penalties, and make the detection and remedying of disparities voluntary, self-effectuating, and automatic.

The single best protection against gaming is to de-link the size of penalties for specific performance disparities from the statistical methodology used to test for those disparities. If the sole determinant of penalty payments by BellSouth is also the means by which BellSouth is determined to be non-compliant, then the incentive—and, conceivably, the opportunity—would exist for CLECs to engage in moral hazard behavior. Such behavior would simultaneously make it more probable for BellSouth to be found non-compliant and liable for penalty payments unrelated to the likely economic significance of that non-compliance.

4. The cap on BellSouth's financial liability should not be procedural, but a percent of its net revenue from services sold in Kentucky

Q. SHOULD BELLSOUTH'S FINANCIAL LIABILITY BE CAPPED AS A MATTER OF ECONOMIC PRINCIPLE?

A. Yes. A cap on BellSouth's financial liability will be an important signal to both BellSouth and CLECs to not employ tactics to secure any undue or extra-market financial advantage for themselves. In other words, a cap would prevent efforts by all parties to game the system. Knowing exactly what its financial liability is would limit the uncertainty under which BellSouth would have to operate. Without a cap on that liability, BellSouth would

have to prepare for compensation claims almost without limit. This could affect BellSouth in at least one important way, namely, compromise BellSouth's ability to utilize its resources efficiently in all possible uses, including serving retail customers. BellSouth's resources to meet its various needs are not unlimited. While delivering retail services at the desired level is both an obligation and a competitive necessity, BellSouth also has an obligation to provide wholesale services of the desired ability to its competitors. An excessive and unreasonable financial liability on one flank of its operations could clearly jeopardize BellSouth's ability to meet its goals elsewhere.

Q. SHOULD THE CAP ON ITS FINANCIAL LIABILITY BE PROCEDURAL OR RELATED TO ITS MARKET PERFORMANCE?

A. I endorse BellSouth's suggestion [Varner, at 99] that its financial liability be capped at 36 percent of its net revenue from all Kentucky operations. This is consistent with the percentage and the type of cap accepted by the FCC in other states that have recently received Section 271 authority.

The idea behind such a cap is straightforward. First, it reflects BellSouth's actual scale of operations and its profitability. As BellSouth loses market share over time, and its net revenue from services sold in Kentucky decreases, the proposed cap would allow a commensurate scaling down of its liability. This would guard against the prospect that, as its net revenue shrinks, any fixed amount of liability would become a larger and more crippling fraction of that net revenue. Also, AT&T's procedural cap does not really cap BellSouth's financial liability with any degree of certainty. Thus, BellSouth's liability could escalate without any limit, and the only recourse available to BellSouth would be to

persuade the Commission to impose a limit on its own. BellSouth's proposed approach would also guard against that prospect. Absent the protection of BellSouth's proposed cap, and sensing BellSouth's increased financial vulnerability in that circumstance, some CLECs could choose to compete with BellSouth not by attempting to do better in the marketplace but by maximizing their claims for compensation from BellSouth. If AT&T's proposed methodology for detecting and compensating performance failures were adopted, CLECs would have a strong incentive to compete in this perverse fashion.

Second, the Commission may find it easier to pick a fair percentage of BellSouth's net revenue for setting its financial liability than to implement and periodically modify a procedural cap amount. Once that percentage is picked, BellSouth's annual financial liability would automatically adjust in proportion to its net revenue from services sold in Kentucky. The Commission would spare itself the onerous—not to mention, contentious—task of determining and revising the liability cap as market circumstances changed. As Mr. Varner notes correctly [Varner, at 98-99], a procedural cap would interfere with the self-effectuating nature of BellSouth's proposed PAP.

5. There should be no adjustments for market penetration

Q. WHAT IS THE 'N' FACTOR AS PROPOSED BY AT&T?

A. For Tier 2 remedies, AT&T proposes a Market Penetration Adjustment that multiplies all levels of Tier 2 penalties by a factor *n* which takes on different values (from 1 to 10) as CLECs' collective market share of access lines varies from roughly half of the market to between zero and 5 percent. As that collective market share grows from its current level in Kentucky the applicable value of *n* would decline, but it is likely to be near the upper end

of its proposed range if the PAP were implemented today and AT&T's proposed Market Penetration Adjustment were accepted. In other words, under this adjustment, Tier 2 penalties today would be several multiples higher than at a time in the future when the market becomes more evenly divided between BellSouth and the CLECs. This approach is not qualified in the least by focusing only on the wholesale services needed by a CLEC to provide retail service to new consumers.

Q. DO YOU ACCEPT THE PRINCIPLE OF SUCH AN ADJUSTMENT BASED ON MOVEMENTS IN MARKET SHARE?

A. No. The use of market share in isolation, as a predictor or estimate of the state of competition in a market, can be particularly misleading. The real issue is not market share *per se*; rather, it is whether the incumbent firm, here BellSouth, has either the incentive or the ability to exercise market power (e.g., restrict competitive entry and/or manipulate market prices). If other indicators confirm that BellSouth is unable, in any way, to exercise that market power, then adjusting Tier 2 remedies for BellSouth's current market share is both unnecessary and distortive. Indeed, the whole point of Tier 1 remedies is to prevent BellSouth from exercising market power, such as by raising barriers to entry for potential competitors. If Tier 1 remedies are successful at accomplishing this, then scaling Tier 2 penalties by a market penetration factor would be overkill and economically inefficient. For Tier 2 remedies, the real question is whether BellSouth's performance disparities are severe enough to cause damage to market competition. If competition is not harmed, i.e., market power is not exercised by BellSouth, then, even in a market in which CLECs have a relatively low combined market share, there can be no justification for scaling remedies

according to a market penetration factor. It is important to keep in view that an observed "low" market penetration factor for CLECs could have other reasons as well, e.g., a strategic unwillingness on the part of CLECs (several of whom are large, well-financed inter-exchange carriers that face potential competitive losses from BellSouth's entry into the interLATA long distance market) to take stronger positions in the local exchange market, or to provide residential local exchange service when their rates—particularly in rural areas—are below the incremental cost to provide the service.

Q. IS ANY MARKET PENETRATION ADJUSTMENT JUSTIFIABLE FROM AN ECONOMIC STANDPOINT?

A. On balance, no. Although AT&T would tie the Market Penetration Adjustment to the current stage of local exchange competition, the arbitrarily high multiplier selected to scale up Tier 2 penalty payments could actually become a lucrative source of income for the state and a monumental drain on BellSouth's resources.

Although the motivation behind infant industry protections (such as that provided by the proposed adjustment) is usually commendable, the problem is that, by promoting a one-way stream of compensation (whether justified or not), those protections can also create certain perverse incentives. Even if the market share-scaled Tier 2 penalties are paid to the state and not to the CLECs themselves, there is no question that large payments would greatly reduce BellSouth's profitability and be a considerable drain on its resources. Although CLECs could benefit from BellSouth being financially weakened in this manner, ironically, CLECs would have a greater incentive to "remain small," i.e., not reduce BellSouth's market share too much. The more the status quo could be preserved, the more

BellSouth would be in danger of making very large penalty payments.

Returning to the theme that any PAP should be based on deterrence, the essential point here is that compensation owed to CLECs for BellSouth's failure to comply with set performance standards must be proportional to the financial or economic significance of the non-compliance. Any adjustment that creates arbitrary and excessive penalty payments also sows the seed for perverse behavior by the recipients of those payments.

6. BellSouth's performance assessment plan should become effective no earlier than the date it receives authorization to offer interLATA services

Q. FROM AN ECONOMIC STANDPOINT, WHEN WOULD BE THE PROPER TIME TO IMPLEMENT A PERFORMANCE ASSESSMENT PLAN FOR BELLSOUTH?

A. The introduction of a PAP for BellSouth should be timed to coincide with the creation of the conditions needed for competition among *all* carriers and unfettered access by those carriers to markets for *all* services. According to Section 271 of the 1996 Act, this will happen when BellSouth receives authorization from the FCC to offer interLATA long distance services. The purpose of the PAP should be to ensure that BellSouth's competitors are not placed at an economic disadvantage because of BellSouth's actions. It is appropriate, therefore, to require that any remaining restraints on BellSouth's ability to compete for all services be removed at the same time. Otherwise, the operation of the PAP alone would create an artificial competitive advantage for BellSouth's competitors for at least the period of time that BellSouth is held out of the interLATA long distance market, and that advantage—once created—may well endure even after BellSouth is authorized entry into that market. For example, as penalty payments get triggered, BellSouth could

respond by shoring up the quality of wholesale services provided to CLECs, perhaps even exceeding the quality that BellSouth provides to its own retail operations. As a result, CLECs that are beneficiaries of this BellSouth response could develop competitive retail services of a higher quality than BellSouth's and win over customers—perhaps even permanently—on the strength of those superior services.

Most customers of telecommunications services prefer stability in their choice of suppliers, particularly when they seek all of their services from a single source. Once customers have elected to receive all their services from its competitors, BellSouth could find it extremely difficult to woo those customers back even after it received interLATA long distance authorization and offered attractive prices and service packages. From an economic standpoint, the preferred outcome would be to put customers in a position to choose among suppliers only when all those suppliers are able to compete for all the services that customers may desire.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.