**COMMONWEALTH OF KENTUCKY**

**BEFORE THE PUBLIC SERVICE COMMISSION**

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| REVIEW OF THE FEDERAL COMMUNICATIONS COMMISSION'S TRIENNIAL REVIEW ORDER REGARDING UNBUNDLING REQUIREMENTS FOR INDIVIDUAL NETWORK ELEMENTS | ) ) ) ) | CASE NO. 2003-00379 |

# REBUTTAL TESTIMONY OF DON J. WOOD

**ON BEHALF OF**

**AT&T COMMUNICATIONS OF THE SOUTH CENTRAL STATES, LLC**

**MARCH 31, 2004**

STATE OF: GEORGIA
COUNTY OF: FULTON

Don J. Wood, being first duly sworn, deposes and says:

## I. BACKGROUND AND PURPOSE

**Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A. My name is Don J. Wood. My business address is 30000 Mill Creek Avenue, Suite 395, Alpharetta, Georgia, 30022.

**Q. ARE YOU THE SAME DON J. WOOD WHO PREFILED DIRECT TESTIMONY IN THIS PROCEEDING ON BEHALF OF AT&T?**

A. Yes.

**Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

A. The purpose of my rebuttal testimony is to respond to the direct testimony of BellSouth witnesses Debra Aron, Randall Billingsley, Pamela Tipton, and James Stegeman.

The testimony of these witnesses supports BellSouth's analysis of the *potential* for competitive entry by CLECs to provide services to mass market customers in certain BellSouth-defined geographic markets, and to do so by self-provisioning the necessary local switching facilities. I am responding specifically to the claim by Dr. Aron that based on the results of the BellSouth analysis, the Commission should conclude that CLECs are not impaired without access to the local circuit switching UNE. Dr. Aron makes the claim (p. 6 and Exhibit DJA-2) that this analysis supports a conclusion that CLECs are not impaired in 6 of the BellSouth-defined markets. The FCC has made it clear that an analysis of potential deployment must consider both operational and economic barriers. AT&T witness Mark Van de Water addresses operational impairment issues in his testimony. My testimony focuses on economic barriers to market entry, and addresses the BellSouth model

used to conduct its analysis and the inputs and assumptions that BellSouth chose to use with that model.

A closer review of the BellSouth "economic impairment" analysis reveals that limitations in the computer model used (the BellSouth Analysis of Competitive Entry, or "BACE" model sponsored by Mr. Stegeman) and conflicting and nonsensical inputs to that model (sponsored by Drs. Aron and Billingsley) have created a highly distorted version of reality that offers no basis whatsoever for a conclusion that CLECs' efforts to provide services to mass market customers are not impaired without access to UNE switching.

The structural limitations of the model cannot be corrected, and BellSouth has refused a request to make the source code available in a usable format that may have permitted a correction to some of these problems. Because of the model limitations, it is impossible in many cases to populate the model with meaningful input values. Making all of the corrections required to bring the BACE in line with reality is ultimately unnecessary, however: my analysis of the BellSouth inputs shows that even minor changes to certain key inputs causes the reported Net Present Value of CLEC entry using self-provisioned local switching to be negative. In other words, with even modest input corrections the BACE confirms the actual facts "on the ground": economic barriers exist to CLEC entry via self-provisioned local switching that make such an investment uneconomic. Prudent, rational CLEC management will not seek to make these investments, and prudent, rational investors will not make the capital available to do so.

**Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

A. Before considering the results of any analysis of "potential deployment," it is important to put this question into the proper context. In the TRO, the FCC creates an opportunity for ILECs to demonstrate, if they can, that no impairment exists in specific, geographic markets. It is important to note that any consideration of "potential entry" is made only after the Commission concludes that "actual entry" has not occurred, even though CLECs have been, and continue to be, motivated to utilize their own network facilities wherever feasible. Any assertion by BellSouth that competition for mass market customers using self-provisioned local switching can *potentially* exist, even though it does not *actually* exist, should be carefully examined before being relied upon.

BellSouth conducts its analysis of "economic" impairment using its new BACE model. This analysis is fundamentally flawed for several reasons. First, the model "locks in" several important assumptions. Important price assumptions are preprocessed and cannot be changed, or even directly examined, by the user. Equally importantly, the model is designed to permit an analysis to be performed *only* over a ten-year time horizon. The user has no ability to consider a shorter investment horizon that a rational investor would consider before making an investment in a large, fixed asset such as a local circuit switch.

BellSouth's inputs to the BACE are likewise flawed, and overstate the likely revenues that a CLEC would receive in two ways. BellSouth has failed to properly consider how its retail prices for services to mass market customers vary across its service territory, causing its initial price assumptions to be flawed and rendering its attempt to segment customers based on spending levels meaningless. More

importantly, BellSouth has failed to consider how prices will change over the time horizon of its analysis. In addition to inflated prices, BellSouth assumes a total market that is too large, CLEC market shares that far exceed those experienced to date, and a rate of customer acquisition for CLECs that exceeds anything previously experienced in the industry. Finally, BellSouth assumes a scope of CLEC service offerings that may not represent the services that the CLEC seeks to offer, and even if offered, does not represent the opportunity for cost recovery assumed by BellSouth.

BellSouth also understates the costs that a CLEC would incur. BellSouth's analysis includes revenues from a broad array of services but includes the sales costs associated with only a subset of those services. The G&A costs assumed by BellSouth are based in part on companies with a much greater customer density in the markets being studied and understate the costs that an efficient CLEC would incur. Most importantly, BellSouth has grossly underestimated the likely cost of capital to a CLEC seeking to self-deploy local circuit switching. After arguing that a CLEC utilizing UNEs incurs less risk that a CLEC investing in its own network infrastructure and after noting that CLECs who made investments in large, fixed network assets to serve mass market customers in the past are now largely bankrupt, BellSouth assumes that a CLEC that invests in local circuit switching will incur *less* risk and a *lower* cost of capital in the future. By understating the cost of capital, BellSouth understates the discount rate applied in its Net Present Value calculation. This causes the present value of future revenues to be overstated and results in an artificially positive reported NPV.

With changes to only a few of its unreasonable assumptions, the BACE consistently reports that CLEC deployment of local switching to serve mass market customers is uneconomic.

**Q. HAVE YOU BEEN ABLE TO CONDUCT A COMPLETE REVIEW OF THE BACE MODEL?**

A. No. As of the filing of this testimony, a complete analysis of the BACE has not been conducted. Our efforts continue to be encumbered by the frequent crashes of the model and the limitations of the model wizard. We continue to encounter instances in which the model produces different results for otherwise identical runs and where different users operating different computers obtain inconsistent results. Our efforts are also limited by a model structure that makes it impossible to change certain key assumptions, such as the time horizon for the analysis (the model effectively locks this assumption at ten years).

While the parties ought to have an opportunity to fully examine the BACE model before its results are relied upon, the issue may ultimately be moot: the limited analysis completed to date indicates that there are ample reasons to reject the model results – and BellSouth's proposed conclusion of no impairment – based on inputs that can be changed.

## II. <u>THE REALITIES OF THE MASS MARKET MUST BE PART OF ANY POTENTIAL DEPLOYMENT ANALYSIS</u>

**Q. WHAT DID THE FCC CONCLUDE REGARDING WHETHER CLECS ARE IMPAIRED WITHOUT ACCESS TO THE LOCAL CIRCUIT SWITCHING UNE WHEN ATTEMPTING TO SERVE MASS MARKET CUSTOMERS?**

A. As I indicated in my direct testimony, the FCC has reached a clear and unambiguous conclusion in the TRO: "we find on a national level that requesting carriers are impaired without access to unbundled local circuit switching when serving mass market customers," and this national finding is driven home by repeated references to this conclusion. TRO ¶ 419, see also ¶¶ 422, 424, 459, 476, 479, and 493. Impairment has been found to exist for CLECs attempting to serve the mass market without access to unbundled local switching, and this Commission may not overturn this finding, unless and until specific, concrete evidence to the contrary is identified and documented for a given market. Even BellSouth's Ms. Blake concedes, at p. 4 of her testimony, that "CLECs serving mass market customers are presumed to be impaired."

**Q. IS IT REASONABLE TO EXPECT THAT AN ANLYSIS OF "POTENTIAL" MARKET ENTRY WILL PROVIDE THE COMMISSION WITH A SOUND BASIS TO CONCLUDE THAT NO IMPAIRMENT EXISTS IN A GIVEN MARKET?**

A. No. It is important to recognize that the FCC developed the mechanism for a "potential deployment" analysis to be conducted and considered if, but only if, this Commission first determines that the triggers set forth in the TRO are not being met. In other words, the consideration of an analysis of potential deployment occurs only if CLECs are not actually self-provisioning switches to serve mass market customers in the market in question and alternative sources of wholesale local switching are not available. The absence of CLECs using self-provided local switching, therefore, will have been firmly established before any analysis begins to determine the operational and economic barriers to entry that a CLEC would face. The reality is that self provisioned switches do not exist in the mass market, and this fact should eliminate

any question regarding the ability of CLECs to enter a market and successfully compete for mass market customers without access to UNE local circuit switching.

In summary, the Commission will have ample evidence that CLECs are impaired without access to unbundled local switching to serve the mass market before it begins any detailed review of BellSouth's assumptions regarding expected revenues and costs or the computer model that uses them. For this reason, the results of any "potential deployment" analysis that suggests an opportunity for CLECs to self-provision local switching to provide service to mass market customers should be met with considerable skepticism.

## A. The Reality Is That CLECs Are Not Self-Provisioning Switches.

**Q. DOES THE FCC PROVIDE A USEFUL REALITY CHECK TO BE APPLIED WHEN CONSIDERING THE RESULTS OF ANY ANALYSIS OF "POTENTIAL" MARKET ENTRY?**

A. Yes; the FCC actually provides two useful reality checks against which the results of any such analysis should be compared.

First, the FCC noted that on a national level, actual entry using self-provisioned switching to provide service to mass market customers has been minimal. After collecting a large volume of information in the course of its investigation, the FCC concluded (¶ 422) that "the record indicates that there has been only minimal deployment of competitive LEC-owned switches to serve mass market customers."

Based on data that the FCC notes may be inflated, the FCC calculated (¶438) that CLECs using self-provisioned switches are serving "less than three percent" of the residential voice grade lines currently served by the incumbent LECs. The FCC

went on to note (¶442) that wholesale local switching from a source other than the incumbent LEC is unavailable: "Moreover, because no party offers evidence to show that third parties are currently offering switching on a wholesale basis … we find that no significant third-party alternatives to unbundled local switching exist."

It is apparent that the FCC did not consider these findings surprising, as it goes on to explain (¶ 422) that "the characteristics of the mass market give rise to significant barriers to competitive LECs' use of self-provisioned switching to serve mass-market customers." As BellSouth's BACE model can be used to demonstrate, these barriers are not easily overcome.

Second, the FCC provides the opportunity for state regulators to consider evidence of self-provisioned local circuit switching to serve mass market customers in specific geographic areas. By definition, if this Commission sees results from a so-called "business case model" that suggests that self-provisioning for mass market customers is economically viable in a given area the Commission is immediately presented with an opportunity for an important reality check: such self-provisioning is not actually taking place.

This reality check is a critical opportunity for the Commission to compare what competitive entry and activity is *actually* taking place with the results of what the BellSouth BACE model suggests *could* be taking place. In my experience, CLECs are highly motivated to utilize their own equipment and facilities whenever and wherever feasible. Reliance on a competitor – BellSouth - to provide wholesale facilities is not an enviable position to be in and means that the CLEC has no control

over important aspects of service quality and provisioning that will be experienced by its customers.

**Q. AFTER MAKING ITS FINDING OF IMPAIRMENT REGARDING LOCAL SWITCHING TO SERVE MASS MARKET CUSTOMERS, WHAT PROCESS DID THE FCC PUT INTO PLACE ON A GOING-FORWARD BASIS?**

A. After concluding (¶422) that "competitive providers providing service to mass market customers are impaired without unbundled access to local circuit switching," the FCC stated (¶423) "our analysis could end with this conclusion." Rather than end with a conclusion of impairment, however, the FCC asked the states to begin the process of identifying proactive steps to mitigate, if possible, the causes of impairment.

Specifically, the FCC noted operational barriers to entry created by an inadequate manual "hot cut" process unsuitable for migrating large numbers of mass market customers from one carrier to another. It asked (¶ 423) state regulators to "approve and implement a batch cut migration process – a seamless, low cost process for transferring large volumes of mass market customers" and to determine if such a process could mitigate the impairment posed by the existing inadequate manual loop migration process.

The FCC (¶ 476) also recognized that other sources of impairment may exist and recognized that, even if a batch cut migration process is implemented, "requesting carriers may be impaired without access to unbundled incumbent LEC local circuit switching because of operational and economic factors other than those associated with hot cuts." The FCC (¶506) directed the states to consider the theoretical possibility that specific geographic markets exist in which "self-provisioning of switching is economic notwithstanding the fact that no three carriers

have *in fact* provisioned their own switches" (emphasis in original). When attempting to determine whether such a theoretical possibility exists, the FCC directed the Commission to consider three factors in concert:

> First, states must examine whether competitors are using their own switches to serve enterprise or mass market customers in the market at issue. Second, states must consider the role of operational barriers ... Third, states must consider the role of potential economic barriers associated with the use of competitive switching facilities. TRO ¶ 507

Dr. Aron (p. 7), Ms. Blake (pp. 11-12), and Mr. Stegeman (p. 11) each refer the FCC's requirement that the states consider each of these three factors.

**Q. DOES THE FCC DEFINE "IMPAIRMENT" AS IT IS USING THE TERM IN THE ORDER?**

A. Yes. The FCC states (¶56) that a determination of impairment means understanding "whether lack of access to an incumbent LEC network element poses a barrier or barriers to entry, including operational and economic barriers that are likely to make entry into a market uneconomic." There are two important elements of this definition: (1) a single barrier to entry, either economic or operational, is sufficient to establish impairment, and (2) the barrier need only make it likely that entry into the market will be uneconomic. The FCC further clarified its definition of impairment when it referred (¶60) to the requirement of section 251(d)(2) that "requires the Commission to consider whether the failure to provide access to a particular network element would impair the ability of a requesting telecommunications carrier 'to provide the services that *it* seeks to offer'" (emphasis in FCC's original). The analysis, therefore, cannot focus on what services BellSouth thinks that CLECs ought

to be offering to mass market customers; it must instead focus on what services CLECs seek to offer.

### B. <u>The Reality Is That Local Circuit Switches Provide Not Only Switching Functions, But Also Serve As An Important Loop Aggregation Point.</u>

**Q. DID THE FCC IDENTIFY THE PRIMARY ECONOMIC BARRIERS TO POTENTIAL DEPLOYMENT?**

A. Only in part. The FCC did identify a barrier to entry that is significant and very difficult to mitigate: the cost advantage that the ILEC enjoys by having its local switching facilities located at the primary aggregation point of its local loops. This significant cost advantage is due to the design of the legacy ILEC network that was developed in a monopoly provider environment.

The FCC recognized that an ILEC end office is an extremely important point of network aggregation: it is the place where the ILEC's local loops come together. The ability to locate local switching equipment at this key facilities-aggregation point is an essential part of an efficient network configuration for serving the mass market customers connected to voice grade loops. As a result, "access to local circuit switching" also means "access to an essential network aggregation point." As the FCC explains (¶429):

> We note that an important function of the local circuit switch is as a means of accessing the local loop. Competitive LECs can use their own switches to provide services only by gaining access to customers' loop facilities, which predominately, if not exclusively, are provided by the incumbent LEC. *Although the record indicates that competitors can deploy duplicate switches capable of serving all customer classes, without the ability to combine those switches with customers' loops in an*

> *economic manner, competitors remain impaired in their ability to provide service* (emphasis added).

Given this legacy network design, a CLEC's ability to purchase UNE loops and UNE local switching, particularly as a UNE-P combination, is the only means of putting the CLEC in a position comparable to that enjoyed by the ILEC; a situation from which it can perform a local switching function at the location where its customers' loops are aggregated.

**Q. WHY IS IT IMPORTANT TO PERFORM THE LOCAL SWITCHING FUNCTION WHERE THE ILEC'S LOCAL LOOPS ARE AGGREGATED?**

A. There is no real debate about the economic necessity of a CLEC's access to ILEC local loop facilities. As the FCC explained (¶439):

> We have made detailed findings that competitors are impaired without access to incumbents' voice-grade local loops. Indeed, no party seriously contends that competitors should be required to self-deploy voice grade loops … entry into the mass market will likely require access to the incumbent's loops, using the UNE-L strategy … this strategy raised operational and economic difficulties associated with accessing the loop. Indeed, as discussed above, *a crucial function of the incumbent's local circuit switch is to provide a means of accessing the local loop* (emphasis added).

The FCC also concluded (¶446) that the presence of cable or CMRS switching facilities does nothing to alleviate this bottleneck: "We are unaware of any evidence that either technology can be used as a means of accessing the incumbents' wireline voice-grade local loops. Accordingly, *neither technology provides probative evidence of an entrant's ability to access the incumbent LEC's wireline voice-grade local loop and thereby self-deploy local circuit switches*" (emphasis added).

**Q. DO OTHER ECONOMIC BARRIERS TO ENTRY EXIST FOR A CLEC ATTEMPTING TO SELF-PROVISION LOCAL SWITCHING TO SERVE THE MASS MARKET?**

A. Yes. As new entrants, CLECs incur a level of risk when investing in a large fixed asset, such as a local switch, that ILECs do not face. This can be looked at as an entry barrier uniquely faced by CLECs, or as an example of a "first in" advantage enjoyed by the ILEC. Either way, it represents a significant barrier to a CLECs' self-provisioning of local switching equipment to serve mass market customers.

When making their investments in local switching, the ILECs did so (and continue to do so) with the knowledge that a large and stable customer base would be available to contribute to the recovery of the asset's capital and operational costs. As the BellSouth witnesses point out (and the BACE demonstrates), the decision to invest in a local circuit switch represents a decision to incur a large fixed cost that must be recovered from a sufficiently large base of customers. Without access to UNE local switching and UNE-P, a CLEC that seeks to serve the mass market would have to enter this market by incurring this large fixed cost and beginning with no customer base at all.

For purposes of illustration, the following is a simplified example. Assume that Carrier A invests $1,000,000 in an asset whose cost is largely fixed, and does so with a ready base of 50,000 customers through which to recover that fixed cost ($20/customer). Carrier A does in fact incur some risk by making the investment, and this risk must be considered by a prudent decision maker when deciding to make the investment. In contrast, assume that Carrier B makes the same $1,000,000

investment, but has an initial customer base of 0 (or even 500 or 5000) through which to recover that same fixed cost (a cost that could begin at $1,000,000 per customer, and would continue to be higher than the ILEC's cost until 50,000 customers are acquired). Carrier B faces a very different risk profile than carrier A, and this different risk profile must be considered when considering whether the investment is prudent for Carrier B to make.

In order to increase the size of its potential customer base, Carrier B could seek to provide service to a larger geographic area with its switch than Carrier A does with its equipment. Doing so would increase the size of the potential customer base but comes with a trade-off: while Carrier B will have increased the likelihood that its per-customer cost of switching could approach (over time) the level incurred by Carrier A, in doing so, Carrier B will have increased its need to transport traffic over extended distances and increased the magnitude of its "backhaul" cost disadvantage *vis-à-vis* Carrier A. The extended transport facilities add to the costs that Carrier B must find a way to recover in the prices charged to its customers.

**Q. PLEASE SUMMARIZE THE RISKS THAT ARE REFLECTED IN YOUR EXAMPLE.**

A. As this simple example illustrates, two factors work in tandem to create a significant economic barrier to the self-provisioning of local circuit switching. The ILEC makes its investment with a customer base in place and is able to locate its switching equipment at the aggregation point of its local loops. In direct contrast, a CLEC must build a customer base while incurring a higher per-customer cost than the ILEC and must incur additional costs to transport traffic from the loop aggregation points to its switch. As discussed in the direct testimony of AT&T's witness Steve Turner, these

added costs constitute an absolute cost penalty to the CLEC. In addition, these added costs contribute to the higher risk faced by the CLEC, which in turn increases the CLEC's cost of capital.

**Q. ARE THERE ADDITIONAL FACTORS THAT CONTRIBUTE TO THE HIGHER RISKS FACED BY THE CLEC WHO ATTEMPTS TO SERVE THE MASS MARKET USING SELF-PROVIDED LOCAL SWITCHING?**

A. Yes. The above risks are multiplied for the CLEC if the ILEC has significant pricing flexibility, as BellSouth does in Kentucky. BellSouth can take advantage of the CLEC's cost disadvantage by reducing its prices to a level above its own costs but below those of the CLEC (for the reasons described above, even a CLEC that is operating more efficiently than BellSouth will, because it does not have BellSouth's "first in" advantages, be at a cost disadvantage for most of its service offerings). Furthermore, by targeting its pricing response, BellSouth can retain or "win back" mass market customers that may have chosen previously to select the CLEC. This will keep the CLEC's per-customer cost high (limiting its ability to grow its market share) and ultimately prevent the recovery of the large fixed investment in local circuit switching. Knowing that BellSouth has this ability, a prudent CLEC would not make this investment.

## C. <u>Any Potential Deployment Analysis Must Take Into Account These Market Realities in Order to be Valid.</u>

**Q. CAN AN ANALYSIS OF "POTENTIAL DEPLOYMENT" PROVIDE USEFUL INFORMATION?**

A. Yes. If properly conducted, a "potential deployment" analysis can shed some light on the following question: "What operational and economic barriers to entry exist that

cause CLECs to be impaired?" The answers (and there are likely to be several) to this question may be useful, particularly if the Commission seeks to find specific actions that it can take to reduce or eliminate these barriers to entry within the geographic markets that are analyzed. Such information would be useful to anyone undertaking an effort to develop prospective requirements to reduce or eliminate the existing sources of impairment. Of course, the results of such an analysis may also indicate that the factors that create the existing level of impairment are more fundamental in nature and are beyond the reach of regulatory requirements.

**Q. PLEASE SUMMARIZE YOUR OBSERVATIONS REGARDING THE PROPER CONTEXT FOR CONSIDERATION OF BELLSOUTH'S "POTENTIAL DEPLOYMENT" ANALYSIS.**

A. The FCC concluded (¶506) that in a situation in which no *actual* deployment of mass market switching could be observed in a defined market area, it might nevertheless be *potentially* possible for the CLECs to utilize their own local circuit switching equipment to serve mass market customers. As described above, such a scenario defies both experience and logic: CLECs have invested in a broad range of entry strategies over the past seven years, and in an area where none of those strategies has met with *actual* success, it is extremely unlikely that there is some as-yet hidden formula for *potential* success, and even more unlikely that BellSouth has now managed to find the formula that has eluded CLECs for all these years. Accordingly, a reversal of the FCC's national finding of impairment for mass market local switching based on the results of a *potential* deployment analysis prepared by BellSouth for this proceeding should not be made without a very careful consideration of the methodology and assumptions relied upon.

## III. THIS COMMISSION SHOULD CAREFULLY FRAME THE QUESTIONS TO BE ANSWERED IN ANY "POTENTIAL DEPLOYMENT" ANALYSIS TO ENSURE AN ACCURATE AND MEANINGFUL RESULT.

**Q. WHAT SPECIFIC QUESTIONS REGARDING "POTENTIAL DEPLOYMENT" ARE BEFORE THE COMISSION IN THIS PROCEEDING?**

A. Any process that ultimately produces a meaningful answer must begin with meaningful statement of the question. This proceeding is no exception.

At p. 6, Dr. Aron states that of the 20 BellSouth-defined markets in Kentucky, BellSouth is claiming that this Commission should reverse the FCC's national finding of impairment in 6 of those markets based on the results of the BACE model. (Dr. Aron also incorrectly claims that the FCC's trigger requirements are met in 2 of the other markets. This claim is addressed in the Rebuttal Testimony of Joseph Gillan on behalf of FCCA.)

Dr. Aron goes on to describe the proper "potential deployment" analysis as directly comparable to a business case analysis that a firm would conduct prior to making an investment. Dr. Aron states (pp. 10-11) that "a business case is an analytical approach, with a specific structure, that is used to quantify the expected value of a particular investment opportunity, and thus determine whether the investment opportunity is 'economic' ... *Properly implemented*, the business case approach correctly distinguishes between 'economic' and 'uneconomic' entry, and therefore is particularly (and uniquely) suited to an analysis of CLEC impairment" (emphasis added).

**Q. DO YOU AGREE WITH DR. ARON'S ASSESSMENT?**

A. While I'm not sure that a business case approach is "uniquely" suited to the task at hand, I do agree that such an analysis, *properly implemented*, can indicate whether a

rational firm would make the investment (and incur the risk) necessary to enter a given market under a specific set of circumstances. This is the "potential deployment"-related question before the Commission in this proceeding.

As always, however, the devil is in the details. In order to be properly implemented, the analyses described by Dr. Aron must be structured correctly and populated with meaningful and accurate assumptions. BellSouth has produced a computer model that is visually stunning (the maps in particular are quite colorful) and impressive in its complexity. This is not a situation in which form trumps substance, however. All the window dressing in the world can't overcome fundamental errors in the structure of the analysis or in the assumptions used to create the results. The BACE results represent such a flawed analysis. After loading the model with unreasonable and internally-inconsistent assumptions, BellSouth has produced the results of a business case analysis that erroneously suggests that market entry by a CLEC would be economic in certain markets. BellSouth has only a tenuous hold on this alternative reality, though. Even slight changes to key assumptions cause BellSouth's business case analysis to indicate that mass market entry via self-provisioned local switching is not economic and would not be undertaken by a rational CLEC.

**Q. WHAT IS THE PURPOSE OF A PROPERLY IMPLEMENTED BUSINESS CASE ANALYSIS?**

A. At pp. 15-16, Dr. Aron correctly points out that "the purpose of a business case is to assess, within the framework of the business case model, the effect of *all* barriers to entry and barriers to capturing profit opportunities that exist in the market at issue. Entry barriers raise the costs or reduce the revenue opportunities associated with

competitive entry. A well-specified business case model incorporates as costs (or reductions in revenue opportunities) the effect of all such barriers" (emphasis in original). I agree with Dr. Aron that any meaningful business case analysis must fully consider all of the potential barriers to entry. I strenuously disagree with any conclusion that the BACE, populated with BellSouth's chosen inputs, represents such an analysis.

**Q. WHAT QUESTIONS WOULD YOU POSE FOR THIS COMMISSION TO ANSWER IN DOING A PROPER BUSINESS CASE OR "POTENTIAL DEPLOYMENT" ANALYSIS?**

A. There are really two questions: (1) "Would a CLEC management team, using reasonable judgment, elect to make this investment?" and (2) "Would a rational investor provide the capital needed for the CLEC to make such an investment?"

**Q. DOES BELLSOUTH ADEQUATELY ADDRESS THE FIRST QUESTION: WOULD A CLEC MANAGEMENT TEAM, USING REASONABLE JUDGMENT, ELECT TO MAKE THIS INVESTMENT?**

A. No. Mr. Stegeman (p. 18) states that "the model allows the user to assume that the CLEC management team will use reasonable judgment." One of the problems with BellSouth's potential deployment analysis, however, is that the assumptions utilized do not represent the assumptions of a CLEC management team exercising reasonable judgment. When inputs and assumptions are used that do reflect such reasonable judgment, the results of the BACE indicate that a rational CLEC would not attempt to provide mass market services via self-provisioned local switching anywhere within BellSouth's operating territory in Kentucky.

**Q. WHY IS IT ALSO IMPORTANT TO ADDRESS THE SECOND QUESTION: "WOULD A RATIONAL INVESTOR PROVIDE THE CAPITAL NEEDED FOR THE CLEC TO MAKE SUCH AN INVESTMENT?"**

A. As Dr. Aron states at p. 12, a properly structured business case analysis permits the determination of "whether investors would rationally provide the capital needed to fund entry (and other) costs that would be incurred." This, of course, is true. A CLEC management team cannot actually make a given investment, however prudent they may consider it to be, without the willingness of an investor to provide the necessary capital. Ideally, rational managers and rational investors will reach the same conclusion regarding the key assumptions of the business case analysis. Their decisions are interrelated but somewhat different. The management team can conduct its business case analysis based on an assumption regarding the cost of necessary capital (the return investors will demand in return for a given investment). Assuming the risk of the investment being considered is comparable to the risk of the company as a whole, this cost of capital can serve as the discount rate for the business case NPV analysis. The return actually demanded by investors, however, will reflect other factors that are not directly related to the CLEC or the potential investment. As Dr. Billingsley correctly points out (p. 26), "current [capital] market values are determined by investors' most up-to-date expectations for the future. These expectations are based on a variety of factors, many of which are external to a CLEC."

The total capital available also plays a role, as different risk/return combinations vie for investors' money. Investors may shy away from a particular industry and be reluctant to invest (or require a higher return if they do). This has, and continues to be, the case for many CLECs. Dr. Billingsley (p. 12) cites to an article that acknowledges this "ongoing drought in the capital markets." Accordingly,

in order to conduct Dr. Aron's "properly implemented" business case analysis, it is first necessary to determine that the necessary capital will be made available, and then to ascertain, based on "investor's most up-to-date expectations for the future," what the cost of that capital will be to CLECs. The result represents the appropriate discount rate to be utilized for the NPV analysis.

**Q. DOES BELLSOUTH ADEQUATELY ADDRESS THE WILLINGNESS OF INVESTORS TO PROVIDE CAPITAL?**

A. No. As I will describe in the next section of my testimony, I disagree with some of Dr. Billingsley's assumptions regarding a CLEC's likely cost of capital. These assumptions can be addressed by changing the inputs to the model. Other problems exist in the structure of the BellSouth BACE model and analysis however – those problems are not so easily remedied. For example, the analysis as conducted implicitly assumes that a CLEC's investment in a local circuit switch represents the same level of risk as the CLEC's current operations (it is this risk of current operations that is reflected in the data relied upon by Dr. Billingsley). This is clearly not the case. As the BellSouth witnesses point out, a CLEC incurs greater risk when self-provisioning a local circuit switch than when utilizing UNE switching or UNE-P. Dr. Billingsley assumes a market beta for CLECs, but the BACE has no place to enter a project beta to reflect the increased riskiness of the investment being considered. As another example, Dr. Billingsley, after citing to the article noting the lack of available capital, implicitly assumes that the necessary total amount of capital will be made available, and will be available at a cost that represents a level of risk *lower* than that currently being experienced by CLECs. There is no rational basis for this assumption.

**Q. WHAT MUST A MODEL SUCH AS BACE DO TO ADDRESS THE QUESTIONS YOU IDENTIFIED?**

A. In order for the model results to accurately provide an answer to the questions "Would a rational CLEC make an investment in local circuit switching to provide service to mass market customers?" or "Are rational investors likely to provide the capital necessary for CLECs to make these investments?," the model must (1) accurately perform the required tasks, (2) permit a consideration of all potential barriers to entry, and (3) be populated with inputs and assumptions that are reasonable.

**Q. HAVE YOU BEEN ABLE TO DETERMINE IF THE BACE MEETS THESE CRITERIA?**

A. I have not yet been able to determine whether the model calculations are accurate because of the preprocessing conducted and the lack of access to any of the underlying code. I have been able to determine that the model does not consider all barriers to entry, and that BellSouth's inputs and assumptions are not reasonable. Of course, a failure in any one of these areas renders the results unreliable.

## IV. BELLSOUTH'S MODEL IS BASED ON AN ALTERNATE REALITY.

**Q. WHAT CATEGORIES OF BACE CLACULATIONS AND ASSUMPTIONS HAVE YOU EXAMINED?**

A. I have examined the calculations and assumptions associated with expected revenue (price, quantity sold, and scope of service offerings) and expected cost (including network/operations cost and the cost to the CLEC of obtaining capital). I will address each category in turn.

**A. <u>BellSouth Makes Improper Revenue Assumptions.</u>**

**Q. WHAT REVENUES MUST BE CONSIDERED IN AN ANALYSIS OF POTENTIAL DEPLOYMENT?**

A. The FCC requires that a CLEC's likely revenues be considered. TRO ¶¶517, 519. The FCC explicitly recognizes that the amount of revenue that will be available to a CLEC in the future (but during the time over which the large fixed cost of a local circuit switch must be recovered) is uncertain. This uncertainty must be reflected in a business case analysis, both in terms of revenue (the prices assumed over time) and cost (the impact of risk).

Initial prices, geographic differences in initial prices, and the magnitude of the price discount that a CLEC must offer to entice a customer to leave the ILEC must be considered. Equally (and perhaps more) importantly, it is necessary to consider how prices are likely to change over time. Long-term trends play a role, but a consideration of such trends alone is not sufficient. It is also necessary to examine the prices and corresponding costs in discreet geographic areas in order to determine (1) whether the price currently being charged in a given area is likely to change over time as it moves toward the underlying cost, and (2) the likely magnitude of such a change. It is also necessary to consider the flexibility that BellSouth has to respond to a CLEC's price. The presence of a BellSouth customer "win-back" program changes the effective price against which a CLEC must compete if it wants to retain the customer for any significant period of time. Finally, the size of the overall market must be considered. Likely CLEC revenues are a function of both the CLEC's market share and the size of the overall market that can be served by the investment being considered.

### 1. BellSouth Makes Improper Assumptions about Price Levels Over Time.

**Q. WHY IS IT IMPORTANT TO CONSIDER PRICE CHANGES OVER TIME?**

A. As the FCC correctly noted (¶484, footnote 1499), a market that is currently characterized by high rates and low costs is most likely to support self-provisioning of a switch by a CLEC to serve mass market customers. It is important to recognize, however – and a prudent CLEC considering an investment of the scale of a local circuit switch would certainly do so – that high prices and low costs do *not* represent a relationship that is likely to be maintained in an effectively competitive market. By definition, effectively competitive markets do not have such relationships. It is essential, therefore, for a CLEC to consider the potential revenues it would receive – and how the level of those potential revenues can be expected to change over time – when deciding whether to invest in its own local circuit switching equipment to serve mass market customers. Such a consideration is fully consistent with the FCC's conclusion (¶517) that when "judging whether entry is economic," states must consider how "competitive risks affect the likelihood of entry."

A CLEC that elects to invest in its own local switching facilities to serve mass market customers must recover the cost of those facilities over time from the revenues received from these customers. Prior to making such a substantial investment, a prudent CLEC will consider not only current prices and projected revenue levels but also likely changes in those prices and levels over time. Some revenue changes can be predicted from current market trends. For example, it would clearly not be prudent for a CLEC to base its investment decision on an expectation of higher toll revenues in the future. Other price and revenue changes can be

predicted by considering the operation of competitive market forces. Successful entry by a CLEC, particularly a CLEC that manages to increase its market share over time, will certainly inspire a competitive pricing response by the ILEC.

**Q. WHAT INITIAL PRICE LEVELS MUST BE CONSIDERED?**

A. It is necessary to consider prices at BellSouth's current level of disaggregation in order to predict CLEC revenues over time with any degree of accuracy. For mass market customers, BellSouth currently has five rate groups in Kentucky (a given wire center is assigned to one rate group). The rates vary significantly across rate groups. Rate Group 5 customers of BellSouth's residential local exchange services pay about 21% more than a comparable customer in Rate Group 1 would pay. BellSouth's tariff pages showing the rate groups and applicable rates are attached as Exhibit DJW-R1.

A complete consideration of this geographic disaggregation is important for two reasons. First, the price that BellSouth charges to retail customers served by a given wire center is the initial price against which the CLEC must compete for that customer. Even if the market is defined as an area larger than a wire center (BellSouth has defined markets as representing a larger geographic area), it is still necessary to consider the level of retail prices at the wire center level because the CLEC must compete against the price actually offered to these customers, not an average of the prices offered by BellSouth to retail customers served by different wire centers.

Second, it is essential that prices be considered at this level of disaggregation in order to determine the likelihood and potential magnitude of price changes during the time horizon of the analysis. This problem is particularly acute because

BellSouth's retail rate structure for mass market customers is roughly the inverse of its cost structure: the highest prices are charged in the lowest cost areas, and lowest prices in the highest cost areas. Areas currently characterized by high prices and low costs are the areas within which prices are most likely to decline over time and likely to be reduced by the greatest amount. A CLEC management team exercising reasonable judgment would not decide to make a large fixed investment based on a business case analysis that assumes that high prices can be maintained in low cost areas.

**Q. DOES BELLSOUTH ADDRESS INITIAL PRICES AT CURRENT LEVELS OF AGGREGATION?**

A. No. I have been unable to find a way in working with the BACE model to establish initial prices based on wire center-specific prices in place today or, more importantly, to forecast future price changes on a wire center-specific basis. Without this ability, it is impossible to accurately determine the revenues that a CLEC is likely to receive.

**Q. DR. ARON ARGUES (PP. 24-25) THAT IT IS APPROPRIATE TO BASE PROJECTED REVENUES USED IN THE BACE ON "PREVAILING PRICES." DO YOU AGREE?**

A. No. Dr. Aron states (p. 24) that BellSouth has developed initial prices for individual service offerings on BellSouth billing data that reflects current prices. Initial prices for bundles of services were developed by Dr. Aron after she reviewed prices for unspecified bundled offerings of unidentified CLECs and engaged in a process that she does not describe in her testimony. Beyond the problem (described in more detail below) that these assumptions were developed in a "pre-processing" stage and are not actual inputs to the BACE, these assumptions are inconsistent with the extended time horizon (ten years) that BellSouth has locked into the BACE.

Dr. Aron's only justification for the use of these prices is a reference to footnote 1588 of the TRO. In that footnote, the FCC does state that for administrative ease prevailing prices can be considered. Of course, a constant price assumption implies a short time horizon for the analysis. BellSouth has juxtaposed the use of prevailing prices with an extended ten-year time horizon that cannot be altered in the model. This is a nonsensical combination of assumptions, and there is nothing in the TRO that indicates that the FCC intends for a "potential deployment" analysis conducted pursuant to the Order to be based on contradictory assumptions.

**Q. DOES EXPERIENCE IN THE INDUSTRY SUPPORT BELLSOUTH'S ASSUMPTION OF PREVAILING PRICES AND AN EXTENDED TIME HORIZON?**

A. No, but contrary evidence does exist. Since the ten-year time horizon is fixed in the model, I have looked at the average level of interstate toll prices during the ten-year period following divestiture. As shown in Exhibit DJW-R2, prices decreased by an average of 5.1% over this period.

**Q. YOU STATED THAT THE ASSUMPTION OF A TEN-YEAR TIME HORIZON CANNOT BE CHANGED IN THE MODEL. WHY IS THIS IMPORTANT?**

A. BellSouth's only stated basis for its ten year time horizon is Dr. Aron's statement that "it is common" to conduct a business case analysis over such a time frame. Such a time horizon may be "common" for an analysis of industries with relatively low rates of structural and technological change, but it is not appropriate for an industry in which significant and fundamental changes have occurred over much shorter periods.

The time horizon of a business case analysis must be limited to period over which assumptions about revenues and costs can be made with a reasonable degree of

confidence that such assumptions will be accurate. As structural changes in the industry or technological changes make these assumptions less certain, it is necessary to reflect this uncertainty. To a point, the discount rate applied in the NPV analysis can be adjusted upward to reflect the risk associated with this increased uncertainty. At some point in time, however, it is necessary to recognize that projections of events sufficiently far in the future are mere guesses.

Over the past ten years, the telecommunications industry has undergone structural changes, prices for many services have changed dramatically, new service offerings have been demanded, the demand for some existing services has dramatically decreased, the cost of providing network functionality has changed significantly, and new means of provisioning existing services have made network investments obsolete earlier than expected. Undaunted, BellSouth has conducted a business case analysis over a comparable ten year time frame but has assumed that only minor changes will occur over the next ten years (and has done a poor job of reflecting even those minor changes.

*A rational CLEC management team considering an investment in a large fixed asset, and a rational investor considering whether or not to provide the capital necessary for such an investment, will not assume that, in this industry, conditions in the year 2013 will represent only minor variations of the conditions experienced today.*

**Q. WHAT HAPPENS IF PRICES IN THE BACE ARE ASSUMED TO DECREASE BY ABOUT THE SAME 5.1% PER YEAR?**

A. It is possible to run the BACE holding all other inputs constant (even though many of these inputs are clearly unreasonable) and changing only the projected level of prices

over time. If prices decrease at the rate previously experienced in the markets for interstate toll, the BACE indicates that the calculated NPV in each Kentucky LATA is significantly reduced. In other words, the BACE indicates that, even if all other inputs are assumed to be reasonable, if the experience in the markets for mass market services is similar to that experienced for toll services after divestiture, CLEC entry into these markets using self-provisioned local switching is likely to be uneconomic. No rational CLEC would or should make the investment.

**Q. DOES THE BACE PERMIT THE USE OF ACCURATE AND REASONABLE ASSUMPTIONS REGARDING PRICES TO BE USED TO CALCULATE THE LIKELY REVENUE THAT A CLEC WOULD RECEIVE?**

A. No. Mr. Stegeman states (pp. 7-8) that based on his experience and understanding of FCC requirements, an "economic model that considers impairment" *should* be "capable of granular analysis," "allow inputs consistent with an efficient CLEC business model," and "incorporate all likely CLEC revenues and costs." The BACE fails to meet these basic requirements.

In spite of Mr. Stegeman's claims (p. 23) that an advantage of the BACE is "the degree of control the user has over the inputs," including price-related inputs, important inputs are not only beyond the control of the user but are hidden from sight in a preprocessing stage. Based on the descriptions provided by Mr. Stegeman and Dr. Aron, it appears that the way prices are treated in this preprocessing stage prevent the "granular analysis" referenced by Mr. Stegeman and required by the FCC.

### 2. Bellsouth Segments Customers In A Way That Is Meaningless And Which Leads To Misleading Results.

**Q. BELLSOUTH HAS SEGMENTED MASS MARKET CUSTOMERS INTO DIFFERENT BANDS. PLEASE EXPLAIN YOUR UNDERSTANDING OF THIS PROCESS.**

A. The BACE divides the mass market customer base into seventeen separate segments based on customer type and spending patterns. As Dr. Aron describes the process (p. 23), the seventeen segments are composed of "one residential segment, divided into five 'quintiles' by customer spend, and four business segments (segmented by numbers of lines at each business customer location), each further subdivided into three 'terciles' by spend." Mr. Stegeman describes this process at pp. 24-25 of his testimony.

Dr. Aron argues (p. 24) that this method of segmentation represents "an economically reasonable way to take into account the granular variation of customer spending." I disagree. There are problems with BellSouth's process that invalidate Dr. Aron's conclusion. Most importantly, the process fails to distinguish between (1) customers that are high or low spenders based on a large or small quantity of services (or units of service) being purchased, and (2) customers who appear to be high or low spenders based on the rate group that their serving wire center is assigned to rather than the quantity of services (or units of service) being purchased.

**Q. WHY IS IT IMPORTANT TO PROPERLY DISTINGUISH AMONG CUSTOMERS BASED ON THE QUANTITY OR UNITS OF SERVICES PROVIDED?**

A. As Mr. Stegeman points out (p. 24), "the expenditure categories are determined at the state level." Then, as Dr. Aron describes (p. 22), each BellSouth-defined market is "allocated the appropriate number of customers from each segment to reflect the

actual economic profile of that market." This process simply will not do what BellSouth intends it to do (or what Dr. Aron claims that it does). By failing to account for the significant geographic disparity in the prices BellSouth charges to mass market customers, the BACE assumes that CLECs are likely to receive what are in reality phantom revenues. A customer that actually purchases very few services but is served by a wire center assigned to one of BellSouth's high price rate groups, may appear in the BACE customer segment associated with the largest spenders and is treated by the model as a particularly desirable customer. Conversely, a customer that actually purchases quite a few services (or units of service), but is served by a wire center assigned to one of BellSouth's low price rate groups, may appear in the BACE customer segment associated with the lowest spenders and treated by the model as a particularly undesirable customer. This is important, because the BACE's assumptions regarding the number of customers in a given geographic area that represent members of a desirable (high spending) market segment is used to determine the opportunities for CLECs to enter and serve such customers.

BellSouth's market segments consist of a mixture of customers that typically spend a given amount of money each month but do so for completely different reasons: some do so because they buy a lot; others do simply because they currently have to pay a lot for what they get. This causes the results of BellSouth's analysis to be incorrect. The geographic price-cost relationships, and the way that BellSouth uses customer segments in the BACE, also causes the results of BellSouth's analysis to be biased toward a showing of "no impairment." Because the prices in the existing high price/low cost wire centers are least likely to be sustained over time, BellSouth

is treating a large number of customers as having the potential to contribute high CLEC revenues in the future, when in fact (based on what the customer actually buys) this is highly unlikely to be the case.

**Q. DR. ARON REFERS TO A "CREAMSKIMMING" STRATEGY BY THE CLECS, AND USES IT TO JUSTIFY BELLSOUTH'S MARKET SEGMENTATION METHOD. DO YOU AGREE WITH HER REASONING?**

A. Not at all. At pp. 22-23 and 29-31, Dr. Aron argues that CLECs have engaged in a "creamskimming" exercise to serve only highly profitable customers and systematically avoid providing service to customers who purchase fewer services (or units of service). She then uses this argument to justify the BACE's method of customer segmentation, asserting (p. 23) that "without a segmentation of customers based on their level of spending, it would be impossible to take into account this kind of 'creamskimming' that an efficient CLEC could perform." Dr. Aron is wrong is several respects.

First, even if it were rational for a CLEC to engage in a creamskimming strategy such as that described by Dr. Aron, the BACE's market segmentation process would not accurately address the issue. Second, the data she relies on is flawed. It does not establish that "creamskimming" occurs. Third, a CLEC that self-provisions a switch has no incentive to "creamskim."

**Q. WHY DOES BELLSOUTH'S MARKET SEGMENTATION PROCESS NOT ADDRESS "CREAMSKIMMING"?**

A. Dr. Aron states (p. 22) that "the FCC has sought to ensure that variations in revenues and costs by geography, customer class, and services offered be taken into consideration ... it is clearly inadequate to assume that the CLEC being modeled gains the same revenue per line for every subscriber acquired – obviously some customers

spend more than others, and may therefore be more attractive for the CLEC to acquire." I agree that it is appropriate to consider differences in current revenues for different customers, but it is even more important to consider the level of revenues that are likely to be received from different customers over time. As described above, many of the customers assigned by BellSouth to a top spending quintile "spend more" because BellSouth's prices vary significantly but are unlikely to produce higher than average revenues over the ten-year period assumed by BACE for cost recovery. A customer who generates a high level of revenues today but is unlikely to do so in the future does not represent a customer that is "more attractive for the CLEC to acquire" and cannot be counted on to contribute to the recovery of the cost of the CLEC's investment in local circuit switching. The BACE results depend on these "phantom revenues" in later years to make market entry appear to be economic, when in fact it is not.

**Q. WHY IS THE DATA THAT DR. ARON RELIES UPON TO SUPPORT HER CLAIM OF "CREAMSKIMMING" FLAWED?**

A. When reviewed carefully, it becomes evident that her assumptions are unsupported. At p. 29 she states that "in my opinion, it is clear that CLECs attempt to attract disproportionate numbers of high-spending customers." Her sole stated basis for this opinion is the observation that the customers lost by BellSouth to CLECs tend to have higher than average spending levels: "If there were no customer targeting, one would expect competitors to win customers about evenly from each customer segment ... Instead BellSouth data indicate that competitive disconnects have been lowest among residential customers with lower-than-average spending on telecommunications services. Absent creamskimming, one would expect CLECs to win 20 percent of its

[sic] customers from each quintile." With regard to the small business market segments, Dr. Aron likewise concludes (p. 29) that "Absent creamskimming occurred, one would expect one would expect CLECs to win 20 percent of its customers from each quintile." Dr. Aron's conclusions are shown graphically in Exhibits DJA-3 and DJA-4.

This is utter nonsense. There is no reason to expect that the spending characteristics of the customers that leave BellSouth and obtain service from a CLEC will be representative of the average BellSouth customer. Experience in the interexchange markets after divestiture indicates that customers self-select based on their spending patterns and the resulting opportunity for savings. During the 1994-1999 period, non-dominant IXCs did not selectively market to only high-spending mass market customers; in fact, these companies had no means of identifying such customers. Yet over time, a disproportionate number of end users with high toll usage became customers of non-dominant IXCs, and AT&T's customer base contained an increasing concentration of customers with little or no toll usage in a given month. The reason why is clear and has nothing to do with IXC marketing plans: those customers with higher usage (and therefore spending) levels had the most to gain from a decision to subscribe to a lower priced carrier. End users who averaged little or no toll usage had no incentive to subscribe to a carrier other than AT&T. A study of AT&T "disconnects" during the mid 1990's would likely reveal the kind of pattern shown in exhibits DJA-3 and DJA-4, but these patterns do not demonstrate that non-dominant IXCs were "creamskimming."

In addition, experience in the interexchange markets supports an assumption that, consistent with the markets for many other products and services, customers in more urban areas are more likely to be early adopters of a newly available service offering or competitive alternatives, while people living in rural areas are likely to respond more slowly. As previously described in, BellSouth's prices for its mass market services vary geographically, with the highest prices in the most densely populated areas. People in these areas are both more likely to try a CLEC service offering and are paying the highest prices to BellSouth. Not surprisingly, Dr. Aron found a disproportionate number of above average spenders among those who had changed service providers: these people are higher spenders in part because BellSouth is charging them higher prices.

**Q. WHY DO CLECS THAT SELF-PROVISION SWITCHES NOT HAVE AN INCENTIVE TO "CREAMSKIM"?**

A. Dr. Aron is simply wrong about the incentives that CLECs would face if attempting to serve the mass market with self-provisioned local switching. At p. 29 she states that "it would be rational for an efficient CLEC to "cream skim." I disagree for two reasons. First, because UNE loop costs are averaged at the level of the wire center, a CLEC has an equal incentive to seek to obtain all customers served by that wire center. There is no incentive for a CLEC to avoid what BellSouth considers to be higher cost customers. Second, a CLEC seeking to provide mass-market services via a self-provisioned local switch will have the incentive to serve as many customers as possible as quickly as possible. The recovery of the large fixed investment in local circuit switching requires customers over which to spread the cost recovery, and even low spending customers provide such an opportunity. As described previously, a

CLEC that seeks to enter a market via self-provisioning of local switching will begin with a significant per-customer cost disadvantage when compared to the ILEC. Such a CLEC will hardly be in the position to be selective about its customer base.

**Q. DR. ARON GOES ON TO ARGUE (P. 31) THAT THE "CREAMSKIMMING" THAT SHE HAS OBSERVED REPRESENTS "COUNTERVAILING ADVANTAGES" FOR CLECS. DO YOU AGREE?**

A. No. Specifically, Dr. Aron concludes that "the evidence clearly supports the economically rational expectation that CLECs engage in customer targeting," and that such targeting "should be considered as one of the 'countervailing advantages' that the FCC requires state commissions to consider in their impairment analysis. I recommend that customer targeting be modeled in the residential and SOHO (1 to 3 line) customer segments consistent with the evidence of BellSouth's experience."

As described above, there is in fact no evidence that CLECs are engaging in such targeting, though the evidence does suggest that customers who have the greatest opportunity for savings "self-select" themselves and are more likely to take service from a CLEC, and that customers in more urban areas – whose spending levels are distorted by the fact that BellSouth's rates to mass market customers are highest in these areas – are more likely to try something new than customers in rural areas. There is also no "economically rational expectation" that CLECs will target in this manner; a CLEC investing in a local circuit switch will have every incentive to provide service to any and all customers willing to subscribe. While high spending customers are more desirable to any carrier than low spending customers (assuming the higher spending level is indicative of the customers desire for more service offerings or units of service and not created by BellSouth's geographic rate disparity),

low spending customers are clearly more desirable than no customer at all to contribute to the recovery of a large fixed cost.

In the end, the customer targeting that Dr. Aron attempts to support (and that BellSouth in fact uses in the BACE) distorts the results of the analysis because it creates an expectation of future CLEC revenues that are unlikely to exist.

### 3. BellSouth Does Not Properly Consider Quantities of Services Purchased by Customers.

**Q. HOW ARE EXPECTATIONS REGARDING THE QUANTITIES OF SERVICES THAT WILL BE SOLD BY A CLEC TREATED BY THE BACE?**

A. The model considers the size of the overall market and likely CLEC penetration levels over time to develop assumptions about service quantities. As with the consideration of prices, BellSouth's treatment of service quantity assumptions suffers from limitations of the BACE and the use of unreasonable assumptions.

As Mr. Stegeman explains (p. 26), the BACE uses the term quantity to "refer to the number of products or services demanded and actually sold, not the number of customers." I am using the term the same way in my testimony. Mr. Stegeman then goes on to describe one of the fundamental problems in the BACE's treatment of customer characteristics: "BACE uses quantities by wire center, for each of the products offered, by customer segment, by customer spend category." Because customers are assigned to spending-based segments at the state level and then allocated to wire centers, the fact that BellSouth's rates vary across wire centers means that customers who purchase very different quantities of service will be assigned to the same spending segment. This makes the average amount spent by a

customer a relatively poor predictor of the quantity of services actually being demanded by the customer. The BACE goes on to assign a different CLEC market share for the different customer spending segments, and ultimately assumes (based on the flawed assumption that high revenue equals high demand) that CLECs are more likely to capture customers with a higher than average demand for service quantities. This assumption distorts the results by overstating future CLEC revenues and causing entry to appear economic when it is not.

### 4. BellSouth Overestimates Future CLEC Market Shares.

**Q. HOW ARE CLEC MARKET SHARES TREATED IN THE BACE?**

A. Dr. Aron (pp. 25-29, 32) and Mr. Stegeman (pp. 34-37) describe this process in some detail. The process involves estimating the total number of customers in a given market for each year of the ten-year time horizon and estimating the CLEC market share in each year.

BellSouth assumes that the total market for wireline telecommunications services will grow over the time horizon of its analysis but does not provide the basis for this assumption. It is reasonable to expect that the penetration of wireless services, particularly with the implementation of local number portability, will cause a reduction in the demand for wireline services over the extended (ten year) time horizon used by BellSouth in its analysis. If such a reduction does take place, the quantity of services sold – and therefore the revenues – projected by the BACE will be overstated. Accordingly, the BACE overestimates the size of the overall pie.

**Q. DOES BACE OVERESTIMATE CLEC MARKET SHARE IN ANY OTHER WAY?**

A. Yes. In addition to overestimating the size of the overall pie, BellSouth's analysis also overstates the likely size of each CLEC's slice. Dr. Aron supports the market share assumptions used in the BACE at pp. 25-26 and 32. She makes three important assumptions: (1) the market share for each CLEC, for each customer segment, will increase to 15% of the total geographic market in question over the ten year period, (2) the rate of customer acquisition will be high: CLECs will gain fully one-half of their ultimate market share for residential customers, and between one fourth and one half of their ultimate market share for business customers, in year one, and (3) the market share (and rate of growth of that market share) is unrelated to the number of competitors in a given market and the current level of prices in that market.

Her stated basis for these assumptions is a review of academic literature, an inspection of CLEC line growth across the BellSouth region, and a review of cable telephony. Such an approach is immediately suspect. The academic literature on firm growth in other industries in unlikely to be relevant to the specific characteristics of mass market telecommunications services in which a market is being transitioned from monopoly control to competitive supply using a combination of UNEs and self-provisioned facilities. CLEC line growth across the region is not likely to be representative of the growth in CLEC market share for specific products in specific geographic markets, and is based on the success of CLECs with access to UNE switching and UNE-P (that by definition is not available to CLECs in BellSouth's potential deployment analysis). At a minimum, this information is insufficient for the granular analysis required by the FCC and described by Mr. Stegeman and Dr. Aron.

Finally, cable telephony is, as the FCC noted in the TRO, a very different market because cable providers do not rely on access to BellSouth local loops. The FCC concluded (¶446) that cable telephony does not "provide probative evidence of an entrant's ability to access the incumbent LEC's wireline voice-grade local loop and thereby self-deploy local circuit switches."

**Q. IS THE ASSUMPTION OF 15% MARKET SHARE FOR ALL MARKET SEGMENTS FOR ALL CLECS A RESONABLE ASSUMPTION?**

A. No. Such a conclusion ignores all experience to date. At p. 27, Dr. Aron justifies her assumption with the following observation: "in the 9-state BellSouth region, CLECs, in aggregate, had attained market shares of 15 percent or more in 172 of BellSouth's wire centers." In other words, nearly eight years after the Act, with access to UNE switching and UNE-P, CLECs have, *in the aggregate*, attained a 15% market share in a few wire centers in the BellSouth's region (Dr. Aron does not state whether the 15% share is limited to services provided to mass market customers). It requires quite a leap to go from this observation to a conclusion that without access to UNE switching or UNE-P, *all* CLECs will *individually* attain a 15% market share *for mass market services* in *each* of the BellSouth wire centers included in Dr. Aron's 6 market areas for which "no impairment" is claimed to exist due to potential deployment. Yet this is exactly what BellSouth is asking the Commission to accept as a reasonable assumption.

**Q. ARE DR. ARON'S MARKET SHARE ASSUMPTIONS REASONABLE WHEN COMPARED TO MS. TIPTON'S CLAIMS REGARDING THE NUMBER OF TRIGGER COMPANIES IN EACH BELLSOUTH-DEFINED MARKET?**

A. No. In Exhibit PAT-5, Ms. Tipton claims that two CLECs are currently offering services to mass market customers using self-provisioned local switching facilities in

2 BellSouth-defined markets. If each of these CLECs is able to capture 15% market share within ten years of its entry using its own switch, the BellSouth-defined markets will ultimately be characterized by an aggregate CLEC market share of between 45% and 75% of the total market. The combination of Dr. Aron's and Ms. Tipton's analysis suggests that BellSouth's market share will be eroded to less than one quarter of the total market.

**Q. IS THE RATE OF CLEC CUSTOMER ACQUISITION ASSUMED BY BELLSOUTH REASONABLE?**

A. No. Dr. Aron assumes that a CLEC will capture 7.5% of the total market for services provided to residential mass market customers in the first year of entry and will do so without access to UNE switching or UNE-P. BellSouth has produced no evidence that any CLEC anywhere in its service territory has captured 7.5% of the market for services provided to residential mass market customers over the past seven years with access to UNE switching or UNE-P.

**Q. YOU STATED THAT THE BELLSOUTH POTENTIAL DEPLOYMENT ANALYSIS ASSUMES THAT CLEC MARKET SHARE IS UNRELATED TO THE NUMBER OF COMPETITORS AND TO THE CURRENT LEVEL OF RETIAL PRICES IN A MARKET. PLEASE EXPLAIN.**

A. Because of the structure of the analysis and the inputs used, the BellSouth analysis implicitly makes both of these assumptions.

The market share assumptions described by Dr. Aron are made without consideration of the presence of other competing providers. Even if, contrary to all empirical evidence, if would be reasonable to assume that the first CLEC to enter a given geographic market can capture a 15% share of mass market services in ten years (and 7.5% in the first year), it is not clear that the second CLEC to enter the

market could do so. If the first CLEC is able to grow its customer base at this very high rate, it is reasonable to assume that it will have captured a significant portion of the customers most responsive to price reductions or new service offerings. The second CLEC will have to repeat this high rate of customer acquisition from among a base of customers that is less likely to change carriers. Put another way, even if it is reasonable to assume that one CLEC can enter a given geographic market and capture a 15% share of mass market services in ten years (and 7.5% in the first year), is it reasonable to assume that two CLECs can enter that market simultaneously and capture a 30% share (15% in the first year)? Again, Bellsouth has offered no evidence that CLECs, with access to UNE switching or UNE-P, have managed to capture a 30% (or even 15%) share of mass market customers in a given geographic area in the nearly eight years that they have had to try.

BellSouth also assumes that CLECs will capture a 15% share in all of the markets identified by Dr. Aron (and will do so at the same accelerated rate), without consideration of the level of initial prices, relationship between initial prices and costs, and the demographics of the individual markets (beyond the flawed customer segmentation by current spending level). Such "across the board" assumptions about market share cannot form the basis for a sufficiently granular analysis as required by the FCC.

**Q. IN ADDITION TO GAINING CUSTOMERS, CLECS CAN ALSO LOSE CUSTOMERS OVER TIME. HOW DOES THE BACE ADDRESS THIS ISSUE?**

A. The BACE permits the user to make assumptions about the rate of customer "churn" experienced by CLECs. The BACE defines churn as the percentage of the CLEC's

customer base in a given market segment that disconnects each month. The problem with BellSouth's analysis is created by assumptions made about churn rates and, more importantly, what churn rates can be reasonably assumed to apply in the future.

Dr. Aron's stated basis for the churn assumptions used (4% per month for residential customers, 2% per month for the two smaller business segments, and 1.5% per month for the two larger business segments) is an observation of historic levels of churn for CLECs and other telecommunications service providers, including wireless providers. The historical data she relies upon are poor predictors of the future for several reasons.

First, the historic levels of CLEC churn fail to reflect BellSouth's new "customer reacquisition" efforts, or "win-back" programs. According to the 2002 BellSouth annual report (the relevant page from that report is attached as Exhibit DJW-R3), as a result of such programs BellSouth has managed to "slash competitive line loss by 24 percent in small business in 2002, compared to the previous year, and by 23 percent in large business. At the same time, in terms of access lines, we increased reacquisition in small business by 22 percent. In large business, the reacquisition rate last year was six times higher than in 2001." If BellSouth's CEO Duane Ackerman is right about this, churn rates from previous years (such as those that Dr. Aron relies upon on p. 33 are not likely to be applicable in future years for business customers). BellSouth now has a similar "customer reacquisition" program in place for its residential customer base, and this program will allow it to effectively dictate CLEC churn rates in that market going forward.

Second, Dr. Aron relies (pp. 33-35, for example) on data supporting an "industry-wide churn rate." This industry-wide rate includes the experience of both ILECs and CLECs. This is almost certain to understate the level of CLEC churn because the ILEC churn rate is biased downward by the presence of a base of customers who are unlikely to change providers in response to competitive alternatives (are therefore served by the ILEC as the former monopoly provider). By including these ILEC customers in the mix, Dr. Aron offers an understated projection of CLEC churn rates.

Third, Dr. Aron's reliance on the experience of the wireless industry is misplaced. To date, this market has been characterized by long-term contracts and the lack of number portability. Once number portability is fully in place and existing contracts have expired, it might be reasonable to use the wireless churn rate as a proxy for a CLEC mass market churn rate. Until that time, the historic restrictions on wireless customers will mean that the wireless churn rate will almost certainly understate the churn rate that should be included in any reasonable potential deployment analysis.

**Q. DOES THE BACE PERMIT THE USER TO ADJUST QUANTITY ASSUMPTIONS IN ORDER TO CONDUCT A "GRANULAR ANALYSIS," "ALLOW INPUTS CONSISTENT WITH AN EFFICIENT CLEC BUSINESS MODEL," AND "INCORPORATE ALL LIKELY CLEC REVENUES AND COSTS"?**

A. No. As described above (and at p. 24 of Dr. Aron's testimony), some of the quantity assumptions are performed in the preprocessing stage of the model. Assumptions regarding CLEC market share are limited to the characteristics of the curve chosen by Dr. Aron (the user can change the ultimate market share and the assumption regarding

how much of that share will be captured in year one, but cannot make other assumptions). The user also cannot adjust market share assumptions in a way that is specific to individual wire centers.

### 5. BellSouth Makes Unreasonable Assumptions About CLEC Service Offerings.

**Q. THE BELLSOUTH "POTENTIAL DEPLOYMENT" ANALYSIS INCLUDES SEVERAL ASSUMPTIONS ABOUT THE SCOPE OF A CLEC'S SERVICE OFFERINGS. ARE THESE ASSUMPTIONS REASONABLE AND APPROPRIATE?**

A. No. Dr. Aron (p. 9) argues that an efficient CLEC will "sell a broad array of products to a wide range of customers," because "many products and many customers can be serviced using the same asset platform without replicating many of the fixed costs." I disagree. It is certainly possible for an efficient firm to specialize in providing service to a specific market segment; not all efficient firms "sell a broad array of products to a wide range of customers." Her observation that "many products" and "many customers" can be served without changing the magnitude of the fixed cost of the investment of local circuit switching is too superficial and high level to be of use in this proceeding. The question before the Commission is a specific one: Would a rational CLEC elect to invest in self-provisioned local circuit switching in order to provide service to mass market customers in a given geographic area? The "fixed cost" in Dr. Aron's observation is a specific piece of equipment – a local circuit switch. The impairment test relates specifically to whether the CLEC can reasonably expect to be able to recover the cost of this investment from the customers whose service is provided by the investment.

It is not necessary or appropriate to assume (as BellSouth does in its analysis) that an efficient CLEC will offer non-switched services in order to help pay for the switch, for two reasons. First, if the non-switched service is subject to effective competition, there will be no surplus revenues to contribute to switch cost recovery. Second, the inclusion of the additional services expands the scope of the business case analysis beyond the specific revenues and costs that are properly included.

Other scenarios may help to put BellSouth's and Dr. Aron's "If the CLEC can't pay for a switch with the revenues from switched services, it doesn't mean that entry is uneconomic, it just means the CLEC needs to get out and sell some other services" theory into context. It would be equally reasonable (and fully consistent with Dr. Aron's theory) to argue that a CLEC whose projected revenues from switched services are insufficient to make the investment economic should nevertheless make this large fixed investment and make up the revenue shortfall by having its employees sell Krispy Kreme® doughnuts on the corner every Saturday morning.

Fortunately, §251 contains no doughnut sales quota. As the FCC correctly notes (¶60), when determining impairment §251(d)(2) "requires the Commission to consider whether the failure to provide access to a particular network element would impair the ability of a requesting telecommunications carrier 'to provide the services that it seeks to offer'" (emphasis in FCC's original). BellSouth's "potential deployment" analysis ignores the language of the Act by forcing an expansion of CLEC service offerings and by erroneously concluding that high margins for these

other services would be maintained in a competitive market over a long period of time.

## B. BACE Includes Faulty Cost Assumptions.

**Q. WHAT COSTS MUST BE CONSIDERED IN A "POTENTIAL DEPLOYMENT" ANALYSIS?**

A. Dr. Aron argues (p. 20) that an analysis of "potential deployment" should incorporate "realistic assumptions" associated with providing mass market services. I agree, but disagree with her conclusion that BellSouth's inputs to the BACE reflect such "realistic assumptions."

**Q. THE FCC STATES (¶517) THAT AN ANALYSIS OF POTENTIAL DEPLOYMENT SHOULD BE BASED ON THE MODEL OF AN "EFFICIENT CLEC BUSINESS MODEL." DOES BELLSOUTH'S ANALYSIS REFLECT THIS REQUIREMENT IN A MEANINGFUL WAY?**

A. No. Dr. Aron argues (pp. 9-10) that in order to reflect this requirement, "the operating assumptions [for the CLEC] that are employed must be consistent with the operations of an efficient firm." I agree. Dr. Aron then goes on to conclude that "this would tend to suggest that key operating metrics like customer acquisition cost, customer churn, and so forth, would tend to be better than the average of actual firms." Her basis for this conclusion is that "a number of CLECs have gone bankrupt, suggesting that, on average CLECs do not have optimally efficient operations." CLEC bankruptcies, however, suggest nothing of the sort. As Dr. Billingsley explains (I will discuss this issue in detail later in my testimony), available evidence suggests the many of the CLECs that have gone bankrupt have done so primarily because they made uneconomic investments in large, fixed, network assets.

Even if Dr. Aron's assumption were valid that the CLECs that have declared bankruptcy have done so because of a lack of "optimally efficient operations," it is reasonable to assume that the CLECs with inefficient operations are either no longer in business or have increased their efficiency as they emerged from bankruptcy. The correct conclusion is the opposite of Dr. Aron's: the fact that a significant number of CLECs have gone bankrupt suggests that competitive market constraints have winnowed the field and those CLECs that currently are operating do have efficient operations. In order to make reasonable assumptions about efficient CLEC costs, it is logical to look at currently operating CLECs. There is no support for Dr. Aron's assumption that current CLEC costs need to be adjusted in order to reflect efficient CLEC operation.

**Q. ARE BELLSOUTH'S ASSUMPTIONS REGARDING CLEC COSTS REASONABLE?**

A. No. I disagree with a number of BellSouth inputs to the BACE, particularly those related to sales and customer acquisition costs, general and administrative ("G&A") costs, and the cost of capital. The cost of capital is especially important because it is the discount rate used in the model's NPV analysis, and the model results are highly sensitive to changes in this rate.

### 1. BACE Assumptions Regarding Sales and Customer Acquisition Costs are Unreasonable.

**Q. PLEASE EXPLAIN WHY BELLSOUTH'S ASSUMPTIONS REGARDING SALES AND CUSTOMER ACQUISITION COSTS ARE NOT REASONABLE.**

A. At pages 38-44, Dr. Aron describes the process that she used to develop an assumed cost for sales/customer acquisition for residence and business mass market customers.

Her methodology consists of gathering estimates of these costs made by various analysts for certain carriers. The data mismatch in the BellSouth assumptions is that while revenues from a very broad range of services are assumed to be available to a CLEC, the sales costs relied upon by Dr. Aron relate almost exclusively to carriers selling a much narrower menu of services. BellSouth makes no adjustment for the cost that a CLEC would incur to sell the additional service offerings assumed in its analysis. BellSouth has included in its analysis the revenues from these services (though it has improperly done so, as explained above) but has not included any costs that a CLEC would incur to sell them.

### 2. BACE Assumptions Regarding G&A Costs are Unreasonable.

**Q. PLEASE EXPLAIN WHY BELLSOUTH'S ASSUMPTIONS REGARDING G&A COSTS ARE NOT REASONABLE.**

A. Dr. Aron explains (pp. 43-44) that she developed an assumption of CLEC G&A costs based on the historic relationship of G&A costs to revenues for ILECs. She does not explain why historic ILEC cost to revenue relationships would be applicable to the future operation of a CLEC. In addition, Dr. Aron states that she has used in her analysis "data representing a number of ILECs of various sizes." The size a CLEC's operation in a given state (even a large CLEC with national operations) is unlikely to compare to the size of the ILEC's operation. BellSouth enjoys a much larger number of customers in all markets within its operating territory than even the largest CLECs, and it is reasonable to expect that BellSouth enjoys some G&A cost advantage as a result. This cost disparity is not caused by CLEC inefficiency, but by BellSouth's position as the former monopoly carrier.

### 3. BellSouth's Cost of Capital Assumptions Ignore Market Reality And Significantly Distort The Results Of The Analysis

**Q. PLEASE EXPLAIN THE ROLE PLAYED BY COST OF CAPITAL ASSUMPTIONS IN BELLSOUTH'S ANALYSIS.**

A. The assumed CLEC cost of capital serves as the discount rate for the BACE's NPV analysis. In this way, the results of the NPV analysis (assuming that it has been properly conducted) indicate whether investors would provide the necessary capital for CLEC investment, and whether a rational CLEC would make the investment, given the risk characteristics of the project and the availability of capital in the capital markets.

BellSouth's assumption is supported by the testimony of Dr. Billingsley. His assumptions and analysis are important, because even small changes in the assumed cost of capital (and therefore the discount rate) have a significant impact on the calculated NPV for the BellSouth-defined markets. If Dr. Billingsley underestimates the return that investors will require to provide capital to CLECs over the time horizon of BellSouth's analysis, the model results will suggest that entry is economic when in fact it is not.

Dr. Billingsley cites to the language in the TRO (¶680) that states that "a TELRIC-based cost of capital should reflect the risks of a competitive market." Of course, in this and related paragraphs, the FCC discussed the ILEC's cost of capital to be used to calculate TELRIC. While the FCC states that this ILEC cost of capital should reflect the increased risk that the ILEC incurs when operating in a competitive market, it does not state (or even suggest) that the risk incurred by the CLEC (and its

resulting cost of capital) will be the same. There is a fundamental difference in the risk incurred by a former monopoly provider, with existing network facilities and an existing base of customers, and the risk incurred by a new entrant to enter the market by making a large fixed investment without the customer base needed to recover the cost of that investment.

**Q. PLEASE THE DESCRIBE THE RISKS THAT A CLEC FACES IN THIS SCENARIO.**

A. When deciding whether to make a large fixed investment whose cost will be recovered over extended period of time, the uncertainty of future revenues and costs (the cash flows) represent the primary form of risk. As Dr. Aron correctly points out (p. 13), "the future cash flows associated with an investment opportunity (such as competitive entry) cannot be known with certainty. A properly-specified business case must reliably adjust for such uncertainty." Through its inputs to the BACE, BellSouth has assumed a relatively predictable set of future cash flows.

**Q. ARE THERE REASONS TO BELEIVE THAT THE BACE'S FORECAST OF FUTURE CLEC CASH FLOWS SHOULD BE CONSIDERED UNCERTAIN, AND THE RISK OF CLEC ENTRY VIA SELF-PROVISIONING HIGH?**

A. Yes. Dr. Billingsley provides quite a bit of evidence in his testimony. He cites to a Standard & Poor's conclusion (p. 9) that "added competition in all segments will result in tighter profit margins for all players." With regard to CLECs specifically, he cites (p. 11) a conclusion by International Data Corporation ("IDC") that "while CLEC access lines will grow at a 12.2% compounded annual growth through 2007, their revenue growth will be in low single digits because of falling prices services for both voice and data services." If IDC is right, a CLEC that relies on the results of BellSouth's "potential deployment" analysis will be in trouble. Not only will the

phantom revenues associated with BellSouth's current (but unsustainable) geographic price differences not materialize, but the margins for voice service will likely be lower than predicted by the BACE. The narrowing margins for data services means that the revenues from these services relied on by the BACE to make entry for switched mass market services appear economic will not be available, leaving the Krispy Kreme® strategy as the only alternative.

Dr. Billingsley concludes (p. 10) that "the point that one can draw from all of this is that the entire telecommunications industry is competitive and risky, and is growing more so with the passage of time." I agree. What Dr. Billingsley fails to point out is that while the increase in risk applies to both ILECs and CLECs, a CLEC continues to face, for the reasons described above, much higher risk than an ILEC.

**Q. YOU DISCUSSED DR. ARON'S ASSUMPTION THAT CLEC BANKRUPTCIES HAVE BEEN THE RESULT OF CLEC INEFFICIENCY. DOES DR. BILLINGSLEY PRESENT AN ALTERNATIVE EXPLANATION?**

A. Yes. Dr. Billingsley refers to a report (p. 12) by the New Paradigm Resources Group, Inc. as the "generally accepted" explanation for the "broad financial distress and bankruptcies experienced by the CLEC industry":

> Just as the fact that a number of CLECs have filed for Chapter 11 has become common knowledge, the reason for their bankruptcies is well known. In the 1990s, the CLECs acquired billions of dollars in financing to invest in telecommunications infrastructure with the assumption that the demand for their services would continue to experience accelerating growth. When this demand did not materialize, the CLECs were left with billions of dollars in debt and no way to pay it off.

The New Paradigm Resources Group, Inc. was quite insightful, because it describes a scenario that now seems oddly familiar: CLECs invested in network infrastructure (large fixed costs) based on an anticipation of future revenues that

would make their market entry economic. Their assumptions regarding whether entry in this manner would be economic, now clearly flawed, are very similar to the assumptions that BellSouth is now inviting CLECs to make through the results of its business case analysis (and is asking the Commission to conclude that the CLEC's should accept the invitation). Like the scenario described in the article Dr. Billingsley cites, CLECs face a decision of whether or not to invest in network infrastructure (in this case a local circuit switch, whose cost characteristics cause it to represent a large fixed cost). BellSouth argues that they could rationally do so, based on assumed future revenues that are based on demonstrably erroneous assumptions about both prices and quantities.

The New Paradigm Resources Group, Inc. article also spells out, at a high level, the formula for CLEC success and longevity: "the CLEC industry continued to shrink in 2002 as several competitive providers with weak business plans" – e.g. those that made large fixed capital investments – "have gone bust." The article goes on to state that "the CLECs that continue to do business in late 2002 have reduced their capital spending" and have "scaled back expansion plans." The message is clear: CLEC entry via self-provisioned network facilities has proven, in many cases, to be uneconomic. In these previous cases, it is reasonable to assume that not all of the CLEC business case analyses contained the number of obvious flaws that the BellSouth analysis contains, yet BellSouth now argues that its analysis makes a clear case for economic investment by CLECs. If the Commission accepts BellSouth's analysis and UNE switching is no longer made available, CLECs will have two choices: they can discontinue any attempts to serve mass market customers, or they

can accept BellSouth's invitation to disaster. A rational CLEC management team (and a rational investor considering whether to make funds available) can only choose the first alternative.

**Q. DR.** BILLINGSLEY **ARGUES THAT THE RISK ASSOCIATED WITH EXISTING CLEC OPERATIONS IS NOT A GOOD PROXY FOR THE RISK THAT WILL BE INCURRED BY CLECS IN THE FUTURE. DO YOU AGREE?**

A. Yes, but my conclusion is the opposite of Dr. Billingsley's. Dr. Billingsley argues that future CLEC operations, when those CLECs will be incurring the risk to make large fixed investments in network infrastructure, will be less risky that the current operation of CLECs who rely on UNE switching and UNE-P. This conclusion is nonsensical and directly contradicts both the articles cited by Dr. Billingsley in his testimony and the ILEC mantra that CLECs currently rely on ILEC provided UNEs in order to avoid the risk of self-provisioning. If Dr. Billingsley were right that self-provisioning local circuit switching is likely to be less risky for a CLEC than utilizing UNE switching, it would compel the question "Why any CLECs are purchasing UNE switching or UNE-P today when doing so simply causes them to incur more risk?"

**Q. HOW DOES DR. BILLINGSLEY REFLECT HIS ASSUMPTION THAT THE SELF-PROVISIONING OF LOCAL CIRCUIT SWITCHING WILL REDUCE THE RISK FACED BY CLECS?**

A. In his discounted cash flow analysis (pp. 19-21), Dr. Billingsley considers the average risk of S&P 500 companies and calculates a cost of equity of 14.31%. He then performs a CAPM analysis based on an estimate of risk that he believes is appropriate for a "representative CLEC." This risk, which primarily reflects the operation of CLECs utilizing UNE switching and UNE-P, yields a cost of capital for this representative CLEC of 20.78%.

Instead of attempting to adjust the "representative CLEC" cost of equity to reflect the higher risk of self-provisioning, Dr. Billingsley (with little explanation) then averages the results for the "representative CLEC" and the S&P 500 companies. In other words, Dr. Billingsley assumes that the level of risk associated with future CLEC operations (and self-provisioning of large fixed assets) will move downward to a point half way between the current "representative CLEC" cost of equity and the average cost of equity of S&P 500 companies.

Dr. Billingsley makes a comparable adjustment to his cost of debt calculations (pp. 24-25). He considers the yield on bonds reflecting current "representative CLEC" levels of risk, and then averages this yield with the yield of bonds that reflect the average level of risk of the S&P 500 companies. As with the cost of equity, Dr. Billingsley assumes that the cost of debt to CLEC will decrease over time as the operations of these CLECs become more risky.

**Q. HOW DOES DR. BILLINGSLEY DEVELOP HIS ASSUMPTION OF AN APPROPRIATE CAPITAL STRUCTURE FOR CLECS ON A GOING-FORWARD BASIS?**

A. At p. 25 Dr. Billingsley notes that the market-based capital structure of his current "representative CLEC" sample is 87.43% debt and 12.57% equity. This structure is clearly not the target capital structure of these companies, but has arisen in large part because of the precipitous drop in the companies' stock prices. He then calculates the market-based capital structure of the S&P 500 companies as 29.50% debt and 70.50% equity. With no explanation, he again averages the results and computes a forward-looking "representative CLEC" capital structure of 58.45% debt and 41.54% equity.

Dr. Billingsley does not explain why he believes that CLECs, as they begin to finance their increasingly risky operations, will find investors who are not only comfortable with this high debt load but who consider the risk associated with this debt to be lower than current levels. The conclusions of the New Paradigm Resources Group, Inc. in the article he cites have apparently not left a significant impression on Dr. Billingsley; he is now suggesting that it would be rational for CLECs to invest in fixed investments by incurring "billions of dollars in debt" and incurring the very real risk of having "no way to pay it off." All the while, he assumes that such a scenario would represent a lower level of risk for both CLECs and investors than existing UNE-based CLEC operations.

**Q. WHAT ARE THE IMPLICATIONS OF DR. BILLINGSLEY'S ASSUMPTIONS?**

A. By underestimating the future cost of debt and equity to CLECs, and by assuming a debt-laden capital structure, Dr. Billingsley has significantly underestimated the discount factor to be applied in BellSouth's business case analysis. As a result, future cash flows are treated with a sense of certainty that they do not have, and the NPV of market entry calculated by the BACE is significantly overstated.

**Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

A. Yes.

# A3. BASIC LOCAL EXCHANGE SERVICE

## A3.2 Statewide Rate Schedules

### A3.2.1 Flat Rate Schedule

A. The following schedule of monthly rates is applicable to Flat Rate Main Station Line Service:

1. Rate groups include total main station lines and PBX trunks.

Residence and Business 2-Pty. are Obsolete Service Offerings. (See Section A103.)

| | | Residence[1] | Business | USOC | (T) |
|---|---|---|---|---|---|
| (a) | Group 1 (0-13,800) | *$15.20* | $35.90 | NA | (I) |
| (b) | Group 2 (13,801 - 25,100) | *15.20* | 35.90 | NA | (I) |
| (c) | Group 3 (25,101 - 45,500) | *16.65* | 35.90 | NA | (I) |
| (d) | Group 4 (45,501 - 200,800) | *17.30* | 33.75 | NA | (I) |
| (e) | Group 5 (200,801 - 1,191,800) | 18.40 | 33.75 | NA | |

B. In accordance with KPSC Docket No. 91-149, the following exchanges have an exception rate to the statewide group.

1. Exception from the schedule.

| | | | | | |
|---|---|---|---|---|---|
| (a) | Georgetown | *$17.30* | $33.75 | NA | (I) |
| (b) | Sadieville | *17.30* | 33.75 | NA | (I) |
| (c) | Stamping Ground | *17.30* | 33.75 | NA | (I) |

### A3.2.2 Reserved For Future Use

### A3.2.3 Measured Rate Schedule

(See A3.1.E.)

A. The following schedule of monthly rates is applicable to measured rate main station line service:

1. Rate groups include total main station lines and PBX trunks for individual lines.

| | | Residence | | | |
|---|---|---|---|---|---|
| | | Low Use | Standard | Business | USOC |
| (a) | Group 1 (0 - 13,800) | $6.91 | $9.84 | $26.17 | NA |
| (b) | Group 2 (13,801 - 25,100) | 7.36 | 10.52 | 28.52 | NA |
| (c) | Group 3 (25,101 - 45,500) | 7.70 | 11.04 | 30.52 | NA |
| (d) | Group 4 (45,501 - 200,800) | 8.05 | 11.56 | 32.46 | NA |
| (e) | Group 5 (200,801 - 1,191,800) | 9.73 | 14.08 | 38.17 | NA |

B. The rates stated preceding include the following monthly local usage allowances for dialed sent paid local calls:

1. Usage allowance

| | | Usage Allowance | USOC |
|---|---|---|---|
| (a) | Low-Use Residence Measured Service | $- | NA |
| (b) | Standard Residence Measured Service | 5.00 | NA |
| (c) | Business Measured Service | 7.50 | NA |

C. The following mileage bands and rates apply for all usage within the Limited Local Calling Area. This schedule is not applicable for any service established after Area Calling Service is offered in an exchange. Usage charges will be billed in arrears. Partial minutes count as full minutes for each individual call completed. (T)

| Mileage Bands | Initial Minute | Additional Minute |
|---|---|---|
| A (0 miles) | $.04 | $.02 |
| B (1-10 miles Limited LCA) | .04 | .02 |
| C (Greater than 10 miles Limited LCA) | .06 | .04 |

**Note 1:** New rates will become effective on October 13, 2002. (N)

KPSC Case No. 2003-00379
Rebuttal Testimony of Don J. Wood
Exhibit: DJW-R1
March 31, 2004

# A3. BASIC LOCAL EXCHANGE SERVICE

## A3.7 Monthly Exchange Rates

### A3.7.1 Flat Rate Service

A. The rates specified herein, with OBRA zone charges when applicable to service furnished outside the Base Rate Area of an exchange or Locality Rate Area, entitle subscribers to an unlimited number of messages to all stations bearing the designation of central offices within the serving exchange and Limited Local Calling Area exchanges or Locality Rate Areas as shown in A3.6 preceding, Local Calling Areas, of this Tariff. Band zone charges shown in A3.9 following apply for Outside Base Area Service, except as noted by symbol (Z) following.

B. Explanation Of Symbols And Abbreviations:

R.G. = Rate Group

LRA = Locality Rate Area

(1) = All Base Rate Area

(2) = All Outside Base Rate Area

(Z) = Geographic zone charges for Individual Line Service outside the Base Rate Area also apply as shown in A3.9.3 following in lieu of those charges shown in A3.9.2 following.

Business 2-Pty. Is an Obsolete Service Offering. (See Section A103.)

Residence 2-Pty. Is an Obsolete Service Offering. (See Section A103.)

C. Exchange

| | | Residence[1] | Business | USOC | (T) |
|---|---|---|---|---|---|
| 1. Allen | | | | | |
| (a) | R.G. 2 | *$15.20* | $35.90 | NA | (I) |
| 2. Aurora | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 3. Bagdad | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 4. Bardstown | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 5. Beattyville | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 6. Beaver Dam | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 7. Bedford | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 8. Benham-Lynch | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 9. Benton | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |

**Note 1:** New rates will become effective on October 13, 2002. (N)

# A3. BASIC LOCAL EXCHANGE SERVICE

## A3.7 Monthly Exchange Rates (Cont'd)

### A3.7.1 Flat Rate Service (Cont'd)

C. Exchange (Cont'd)

10. Bessie Bend

The exchange rates and regulations applicable in that area in and around Bessie Bend, Kentucky, which lies within and is a part of the local service area of the Tiptonville, Tennessee exchange, an exchange principally located within the State of Tennessee, shall be the same as those fixed for similar services in Tiptonville by the Public Service Commission of Tennessee.

11. Bloomfield

| | Residence[1] | Business | USOC | |
|---|---|---|---|---|
| (a) R.G. 1 | *$15.20* | $35.90 | NA | (I) |
| 12. Bluff Springs | | | | |
| (a) R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 13. Bowling Green (Z) | | | | |
| (a) R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 14. Bremen (Z) | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 15. Burgin | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 16. Cadiz | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 17. Calhoun | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 18. Campbellsburg | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 19. Canton | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 20. Carlisle | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 21. Carrollton | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 22. Cayce (Z) | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 23. Centertown | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 24. Central City (Z) | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |

**Note 1:** New rates will become effective on October 13, 2002. (N)

# A3. BASIC LOCAL EXCHANGE SERVICE

## A3.7 Monthly Exchange Rates (Cont'd)

### A3.7.1 Flat Rate Service (Cont'd)

C. Exchange (Cont'd)

| | | Residence[1] | Business | USOC | |
|---|---|---|---|---|---|
| 25. Chaplin | | | | | (T) |
| (a) R.G. 1 | | *$15.20* | $35.90 | NA | (I) |
| 26. Clay | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |
| 27. Clinton | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |
| 28. Cloverport | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |
| 29. Corbin | | | | | |
| (a) R.G. 2 | | *15.20* | 35.90 | NA | (I) |
| 30. Cornishville | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |
| 31. Corydon | | | | | |
| (a) R.G. 2 | | *15.20* | 35.90 | NA | (I) |
| 32. Crab Orchard | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |
| 33. Crofton | | | | | |
| (a) R.G. 3 | | *16.65* | 35.90 | NA | (I) |
| 34. Cropper | | | | | |
| (a) R.G. 2 | | *15.20* | 35.90 | NA | (I) |
| 35. Cynthiana | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |
| 36. Dade Park | | | | | |

The exchange rates and regulations applicable in that area in and around Dade Park, Kentucky, which lies within and is a part of the local service area of the Evansville, Indiana exchange, an exchange principally located within the State of Indiana, shall be the same as those fixed for similar services in Evansville by the Public Service Commission of Indiana.

| | | | | | |
|---|---|---|---|---|---|
| 37. Danville | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |
| 38. Dawson Springs | | | | | |
| (a) R.G. 2 | | *15.20* | 35.90 | NA | (I) |
| 39. Dixon | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |
| 40. LRA Poole (2) (Z) | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |

**Note 1:** New rates will become effective on October 13, 2002. (N)

# A3. BASIC LOCAL EXCHANGE SERVICE

## A3.7 Monthly Exchange Rates (Cont'd)

### A3.7.1 Flat Rate Service (Cont'd)

C. Exchange (Cont'd)

| | | Residence[1] | Business | USOC | (T) |
|---|---|---|---|---|---|
| 41. Drakesboro (Z) | | | | | |
| (a) R.G. 1 | | *$15.20* | $35.90 | NA | (I) |
| 42. Earlington | | | | | |
| (a) R.G. 2 | | *15.20* | 35.90 | NA | (I) |
| 43. Eddyville (Z) | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |
| 44. Elkhorn City | | | | | |
| (a) R.G. 2 | | *15.20* | 35.90 | NA | (I) |
| 45. Elkton | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |
| 46. LRA Allensville | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |
| 47. Eminence | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |
| 48. LRA New Castle | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |
| 49. LRA Pleasureville | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |
| 50. LRA Smithfield | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |
| 51. Ensor | | | | | |
| (a) R.G. 3 | | *16.65* | 35.90 | NA | (I) |
| 52. Fedscreek | | | | | |
| (a) R.G. 2 | | *15.20* | 35.90 | NA | (I) |
| 53. Finchville | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |
| 54. Ford | | | | | |
| (a) R.G. 3 | | *16.65* | 35.90 | NA | (I) |
| 55. Fordsville | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |
| 56. Frankfort | | | | | |
| (a) R.G. 3 | | *16.65* | 35.90 | NA | (I) |
| 57. Franklin | | | | | |
| (a) R.G. 1 | | *15.20* | 35.90 | NA | (I) |

**Note 1:** New rates will become effective on October 13, 2002. (N)

# A3. BASIC LOCAL EXCHANGE SERVICE

## A3.7 Monthly Exchange Rates (Cont'd)

### A3.7.1 Flat Rate Service (Cont'd)

C. Exchange (Cont'd)

| | | Residence[1] | Business | USOC | (T) |
|---|---|---|---|---|---|
| 58. Fredonia (Z) | | | | | |
| (a) | R.G. 1 | *$15.20* | $35.90 | NA | (I) |
| 59. Freeburn | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 60. Fulton (Z) | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 61. Georgetown | | | | | |
| (a) | See A3.2.1.B | - | - | NA | |
| 62. Ghent | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 63. Gilbertsville | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 64. Gracey | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 65. Greenville (Z) | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 66. Guthrie | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 67. LRA Keysburg (2) (Z) | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 68. Habit | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 69. Hanson | | | | | |
| (a) | R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 70. Hardinsburg | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 71. Harlan | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 72. Harrodsburg | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 73. Hartford | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 74. Hawesville | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |

**Note 1:** New rates will become effective October 13, 2002. (N)

# A3. BASIC LOCAL EXCHANGE SERVICE

## A3.7 Monthly Exchange Rates (Cont'd)

### A3.7.1 Flat Rate Service (Cont'd)

C. Exchange (Cont'd)

| | | Residence[1] | Business | USOC | |
|---|---|---|---|---|---|
| 75. Hebbardsville | | | | | |
| (a) | R.G. 2 | *$15.20* | $35.90 | NA | (I) |
| 76. Henderson | | | | | |
| (a) | R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 77. Hickman | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 78. Hopkinsville | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 79. Inez | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 80. Island | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 81. Jackson | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |

82. Jellico

The exchange rates and regulations applicable in that area in and around Jellico, Kentucky, which lies within and is a part of the local service area of the Jellico, Tennessee exchange, an exchange principally located within the State of Tennessee, shall be the same as those fixed for similar services in Jellico, Tennessee by the Public Service Commission of Tennessee.

83. Jordan

The exchange rates and regulations applicable in that area in and around Jordan, Kentucky, which lies within and is a part of the local service area of the Union City, Tennessee exchange, an exchange principally located within the State of Tennessee, shall be the same as those fixed for similar services in Union City by the Public Service Commission of Tennessee.

| | | | | | |
|---|---|---|---|---|---|
| 84. Junction City | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 85. Kirksville | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 86. LaFayette | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 87. LaGrange | | | | | |
| (a) | R.G. 5 | 18.40 | 33.75 | NA | |
| 88. Lawrenceburg | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 89. Lebanon Junction | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |

**Note 1:** New rates will become effective October 13, 2002. (N)

# A3. BASIC LOCAL EXCHANGE SERVICE

## A3.7 Monthly Exchange Rates (Cont'd)

### A3.7.1 Flat Rate Service (Cont'd)

C. Exchange (Cont'd)

| | | Residence[1] | Business | USOC | |
|---|---|---|---|---|---|
| 90. Little Rock | | | | | |
| (a) | R.G. 1 | *$15.20* | $35.90 | NA | (I) |
| 91. Livermore | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 92. Louisa | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 93. Louisville (1) | | | | | |
| (a) | R.G. 5 | 18.40 | 33.75 | NA | |
| 94. Macco | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 95. Mackville (Z) | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 96. Madisonville | | | | | |
| (a) | R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 97. LRA Anton Area (2) (Z) | | | | | |
| (a) | R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 98. Marion | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 99. Martin | | | | | |
| (a) | R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 100. Mayfield (Z) | | | | | |
| (a) | R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 101. Maysville (Z) | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 102. McCarr (Z) | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 103. McDaniels | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 104. McDowell | | | | | |
| (a) | R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 105. Middlesboro (Z) | | | | | |
| (a) | R.G. 2 | *15.20* | 35.90 | NA | (I) |

**Note 1:** New rates will become effective October 13, 2002. (N)

# A3. BASIC LOCAL EXCHANGE SERVICE

## A3.7 Monthly Exchange Rates (Cont'd)

### A3.7.1 Flat Rate Service (Cont'd)

C. Exchange (Cont'd)

| | Residence[1] | Business | USOC | |
|---|---|---|---|---|
| 106. Millersburg | | | | |
| (a) R.G. 1 | *$15.20* | $35.90 | NA | (I) |
| 107. Milton | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 108. Mooresville | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 109. Morganfield | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 110. LRA Waverly | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 111. Morgantown | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 112. Mortons Gap | | | | |
| (a) R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 113. Mt. Eden | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 114. Mt. Sterling (Z) | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 115. Murray | | | | |
| (a) R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 116. Nebo | | | | |
| (a) R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 117. Neon | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 118. New Haven | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 119. New Liberty | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 120. North Middleton | | | | |
| (a) R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 121. Nortonville | | | | |
| (a) R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 122. LRA White Plains | | | | |
| (a) R.G. 2 | *15.20* | 35.90 | NA | (I) |

**Note 1:** New rates will become effective October 13, 2002. (N)

# A3. BASIC LOCAL EXCHANGE SERVICE

## A3.7 Monthly Exchange Rates (Cont'd)

### A3.7.1 Flat Rate Service (Cont'd)

C. Exchange (Cont'd)

| | | Residence[1] | Business | USOC | (T) |
|---|---|---|---|---|---|
| 123. Oak Grove | | | | | |
| (a) | R.G. 4 | *$17.30* | $33.75 | NA | (I) |
| 124. Owensboro | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 125. Owenton | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 126. Paducah (Z) | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 127. Paintsville | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 128. Panther | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 129. Paris | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 130. LRA Clintonville | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 131. LRA Shawhan | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 132. Pembroke | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 133. Perryville | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 134. Pikeville | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 135. LRA Meta (2) (Z) | | | | | |
| (a) | R.G.3 | *16.65* | 35.90 | NA | (I) |
| 136. Pineville | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 137. Pleasant Ridge | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 138. Port Royal | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 139. Prestonsburg | | | | | |
| (a) | R.G. 2 | *15.20* | 35.90 | NA | (I) |

**Note 1:** New rates will become effective October 13, 2002. (N)

# A3. BASIC LOCAL EXCHANGE SERVICE

## A3.7 Monthly Exchange Rates (Cont'd)

### A3.7.1 Flat Rate Service (Cont'd)

C. Exchange (Cont'd)

| | | Residence[2] | Business | USOC | (T) |
|---|---|---|---|---|---|
| 140. Princeton (Z) | | | | | |
| (a) | R.G. 1 | *$15.20* | $35.90 | NA | (I) |
| 141. Providence | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 142. Richmond | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 143. Robards | | | | | |
| (a) | R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 144. Rose Terrace (Z) | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 145. Russellville | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 146. LRA Olmstead | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 147. Sacramento | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 148. Sadieville[1] | | | | | |
| (a) | See A3.2.1.B | - | - | NA | |
| 149. St. Charles | | | | | |
| (a) | R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 150. Salvisa | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 151. Sebree | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 152. Sharon Grove | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 153. Shelbyville | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 154. Simpsonville | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 155. Slaughters | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 156. Sorgho | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |

**Note 1:** Exception Rate.

**Note 2:** New rates will become effective October 13, 2002. (N)

# A3. BASIC LOCAL EXCHANGE SERVICE

## A3.7 Monthly Exchange Rates (Cont'd)

### A3.7.1 Flat Rate Service (Cont'd)

C. Exchange (Cont'd)

| | | Residence[2] | Business | USOC | |
|---|---|---|---|---|---|
| 157. S. Williamson (Z) | | | | | (T) |
| (a) | R.G. 2 | *$15.20* | $35.90 | NA | (I) |
| 158. Springfield | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 159. Stamping Ground[1] | | | | | |
| (a) | See A3.2.1.B | - | - | NA | |
| 160. Stanford | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 161. Stanley | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 162. Stanton | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 163. Stone | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 164. Sturgis | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 165. Sulphur | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 166. Symsonia (Z) | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 167. Taylorsville | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 168. Trenton | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 169. Utica | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 170. Virgie | | | | | |
| (a) | R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 171. Waco | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |

**Note 1:** Exception Rate.

**Note 2:** New rates will become effective October 13, 2002. (N)

# A3. BASIC LOCAL EXCHANGE SERVICE

## A3.7 Monthly Exchange Rates (Cont'd)

### A3.7.1 Flat Rate Service (Cont'd)

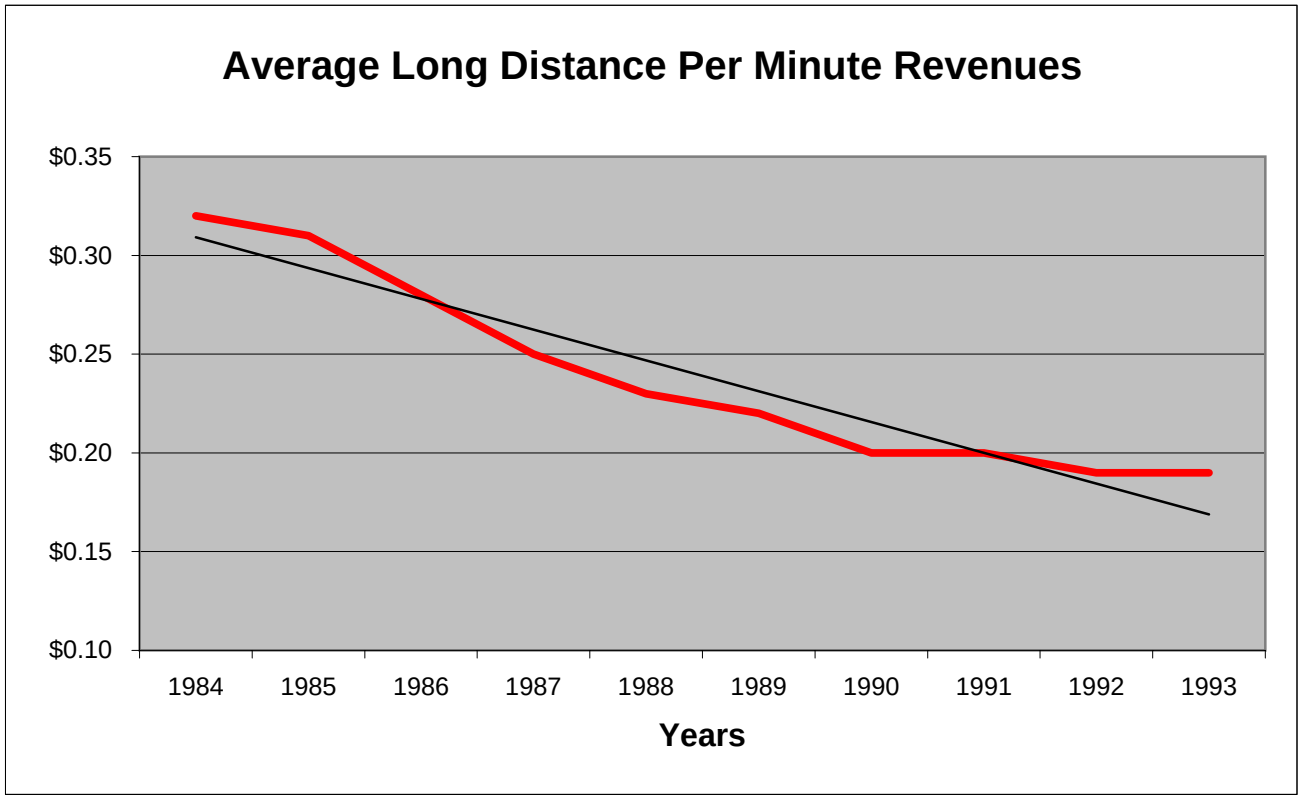
C. Exchange (Cont'd)

| | | Residence[1] | Business | USOC | |
|---|---|---|---|---|---|
| 172. Waddy | | | | | |
| (a) | R.G. 1 | *$15.20* | $35.90 | NA | (I) |
| 173. Wallins Creek | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 174. Warfield (Z) | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 175. Water Valley | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 176. Wayland | | | | | |
| (a) | R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 177. W. Louisville | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 178. West Point (1) | | | | | |
| (a) | R.G. 5 | 18.40 | 33.75 | NA | |
| 179. Whitesburg | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 180. Whitesville | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |
| 181. Williamsburg | | | | | |
| (a) | R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 182. Willisburg | | | | | |
| (a) | R.G. 1 | *15.20* | 35.90 | NA | (I) |
| 183. Winchester | | | | | |
| (a) | R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 184. LRA Pilot View | | | | | |
| (a) | R.G. 2 | *15.20* | 35.90 | NA | (I) |
| 185. Woodburn (Z) | | | | | |
| (a) | R.G. 3 | *16.65* | 35.90 | NA | (I) |

**Note 1:** New rates will become effective October 13, 2002. (N)

| Year | Average Revenue Per Minute for Interstate and International Calls | |
|---|---|---|
| 1984 | $ 0.32 | |
| 1985 | $ 0.31 | |
| 1986 | $ 0.28 | |
| 1987 | $ 0.25 | |
| 1988 | $ 0.23 | |
| 1989 | $ 0.22 | |
| 1990 | $ 0.20 | |
| 1991 | $ 0.20 | |
| 1992 | $ 0.19 | |
| 1993 | $ 0.19 | |

| | |
|---|---|
| Average Yearly Decrease | -5.08% |



# >> Ackerman Answers

**CEO Duane Ackerman responds to shareholders' questions about four important issues that impact BellSouth's business.**

In December 2002, BellSouth received Federal Communications Commission approval to provide long distance services in all of the markets where we operate. Adding this capability to our other customer offerings will enhance our ability to meet the competition head-on in 2003 with new products and packages, superior service and targeted customer reacquisition initiatives.

Along with BellSouth's reputation for reliability and service, the centerpiece of our customer reacquisition initiatives is the flexibility and value of our new BellSouth Answers™ packages. Answers combines on a single bill any or all of the data, voice and Internet services residential customers want – long distance and local, wireline and wireless. Just five months after the product's introduction in late July 2002, we had nearly 1.2 million customers using BellSouth Answers.

BellSouth continues to lead the industry in independent surveys of customer satisfaction and service excellence. We have highlighted these recognitions for 2002 throughout this annual report.

These awards mean a lot more than a boost to BellSouth's marketing efforts. Virtually every consumer research organization, from J.D. Power and Associates to the National Quality Research Center, correlates customer satisfaction with customer loyalty. In turn, satisfied customers translate into higher revenues, lower marketing costs and reduced expenses associated with customer "churn."

Our customer reacquisition initiatives are based on *listening* to what people and businesses want, and *answering* with the products, services and solutions they need. It's working. We slashed competitive line loss by 24 percent in small business in 2002, compared to the previous year, and by 23 percent in large business. At the same time, in terms of access lines, we increased reacquisition in small business by 22 percent. In large business, the reacquisition rate last year was six times higher than in 2001.

We also are continuing to adjust BellSouth's cost structure in response to generally weak demand in the economy, as well as to competitive loss. In 2002, we took the difficult but necessary measures to reduce our workforce by nearly 11,000.