BOULT ▪ CUMMINGS
CONNERS ▪ BERRY PLC

Jon E Hastings
(615) 252-2306
Fax (615) 252-6306
Email jhastings@boultcummings com

February 27, 2004

Honorable Deborah Taylor Tate, Chairman
Tennessee Regulatory Authority
460 James Robertson Parkway
Nashville, TN 37243-0505

In Re: Implementation of the Federal Communications Commission's Triennial Review Order (Nine-month Proceeding) (Switching)
Docket No 03-00491

Dear Chairman Tate:

Enclosed please find a CD-Rom and five (5) copies of Dr. Mark T Bryant's non-proprietary rebuttal testimony filed on behalf of MCImetro Access Transmission Services, Inc. and Brooks Fiber Communications of Tennessee, Inc. (collectively "MCI") in the above-referenced docket Also enclosed is one (1) proprietary version of Dr Bryant's rebuttal testimony

Copies of the testimony has been served on all parties of record.

Very truly yours,

BOULT, CUMMINGS, CONNERS & BERRY, PLC

By. Jon Hastings
Jon E Hastings

JEH/th

Enclosures

CERTIFICATE OF SERVICE

I hereby certify that on February 27, 2004 a copy of the foregoing document was served on the parties of record, via electronically, US mail or hand delivery

Guy Hicks
BellSouth Telecommunications, Inc
333 Commerce St., Suite 2101
Nashville, TN 37201

Charles B Welch
Farris, Mathews, et Al
618 Church St , #300
Nashville, TN 37219

Joe Shirley
Office of Tennessee Attorney General
P. O Box 20207
Nashville, Tennessee 37202

H LaDon Baltimore
Farrar & Bates
211 Seventh Ave , N #320
Nashville, TN 37219-1823

James Wright
United Telephone – Southeast
14111 Capital Blvd.
Wake Forest, NC 27587

Martha M. Ross-Bain
AT&T Communications of the
South Central States, LLC
1200 Peachtree Street, Suite 8100
Atlanta, GA 30309

Ms. Carol Kuhnow
Qwest Communications, Inc
4250 N Fairfax Dr.
Arlington, VA 33303

Henry Walker
Boult, Cummings, et al.
P. O. Box 198062
Nashville, TN 37219-8062

Dale Grimes
Bass, Berry & Sims
315 Deaderick St., #2700
Nashville, TN 37238-3001

Mark, W Smith
Strang, Fletcher, et al.
One Union Square, #400
Chattanooga, TN 37402

Nanette S. Edwards
ITC^DeltaCom
4092 South Memorial Pkwy
Huntsville, AL 35802

Guilford F. Thornton, Jr.
Stokes & Bartholomew
424 Church St., Suite 2800
Nashville, TN 37219-2386

Jon E. Hastings

BEFORE THE TENNESSEE REGULATORY AUTHORITY
NASHVILLE, TENNESSEE

IN RE:

Implementation of the Federal Communication's Commission's Triennial Review Order – 9 MONTH PROCEEDING – SWITCHING	))))	**DOCKET NO. 03-00491**

REBUTTAL TESTIMONY OF DR. MARK T. BRYANT

On Behalf Of

MCIMETRO ACCESS TRANSMISSION SERVICES, LLC

And

BROOKS FIBER COMMUNICATIONS OF TENNESSEE, INC.

February 27, 2004

PUBLIC VERSION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A My name is Mark T. Bryant, and my business address is 4209 Park Hollow Court, Austin, Texas.

Q. ARE YOU THE SAME MARK T. BRYANT WHO PREVIOUSLY FILED DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes, I am.

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 Pleatsikas, Tipton, Stegeman, and Aron

I. REBUTTAL OF THE TESTIMONY OF DR. PLEATSIKAS

Q. DO YOU AGREE WITH THE ROLE OF MARKET DEFINITION IN DETERMINING THE DEGREE OF ACTUAL COMPETITION FOR LOCAL EXCHANGE SERVICE (THE "TRIGGERS" ANALYSIS) AND IN DETERMINING THE POTENTIAL FOR CLEC SWITCH DEPLOYMENT IN TENNESSEE AS OUTLINED BY DR. PLEATSIKAS?

A. In general, yes In discussing the role of market definition, Dr. Pleatsikas correctly notes that the market definition should permit a granular analysis and should reflect cost or other differences that might affect a competitor's ability to provide service and that the market should be defined in such a

way as to reveal differences in markets that would result in differing findings of impairment. Dr. Pleatsikas also correctly identifies some of the cost differences that have an impact on a CLEC's decision to offer UNE-L based local exchange service

Q. DO YOU AGREE WITH DR. PLEATSIKAS' CONCLUSION THAT A MARKET DEFINITION OF UNE RATE ZONES DIVIDED BY COMPONENT ECONOMIC AREAS ADEQUATELY CAPTURES THE FACTORS THAT AFFECT A CLEC'S DECISION TO OFFER UNE-L BASED SERVICE?

A. No, I do not. Among the factors cited by Dr. Pleatsikas to support his proposed market definition are the differences in rates for UNE loops and the cost of transport from customers' locations to the CLEC's switch. While Dr Pleatsikas' market definition captures the differences in recurring rates for UNE loops and other ILEC rate elements, it fails to adequately capture the effect that the cost of transport and the costs imposed by other ILEC charges may have on a CLEC's decision to enter the market as a UNE-L based local service provider

Q. IN WHAT WAY DOES DR. PLEATSIKAS' MARKET DEFINITION FAIL TO ADEQUATELY ADDRESS THE EFFECT OF THE COST OF TRANSPORT?

A The rates charged by BellSouth for transport rate elements vary by distance as well as by rate zone As a result, providing service at a wire

center that is located further from a CLEC's switch is more costly to the CLEC than serving a wire center that is close to the CLEC's switch. Failure to recognize this cost differential in effect averages transport costs across all wire centers in BellSouth's proposed markets. While the market as a whole might be profitable under Dr. Pleatsikas' market definition, the potential exists that some wire centers within the proposed market would be unprofitable to serve. If a market as broad as a CEA is defined, differences in profitability in wire centers will be obscured, and the impairment analysis will thus fail to capture any areas where the CLECs cannot profitably provide service

Q. WHAT OTHER CLEC COSTS VARY AMONG WIRE CENTERS?

A. There are a number of cost factors that vary among wire centers. These include the number of addressable lines in the wire center, the number of lines for which the CLEC is capable of offering DSL services, the number of lines in the wire center served by digital loop carrier technology, the relative number of business and residential customers in the wire center, and the demographics of customers served from the wire center.

Q. HOW DOES THE NUMBER OF ADDRESSABLE LINES IN THE WIRE CENTER AFFECT THE CLEC's COSTS?

A The number of addressable lines in the wire center affects the CLEC's ability to recover the substantial fixed cost associated with establishing a collocation in the wire center Some of these costs are in the form of ILEC

nonrecurring charges for the establishment of the collocation, and other are in the form of CLEC capital expenditures for equipment to be located in the collocation space, and the cost of installing and configuring the equipment The fewer the number of lines that are served from a particular wire center, the fewer the number of potential CLEC customers over which these costs may be spread, and thus the higher the CLEC's per-customer cost will be.

Q. HOW DOES THE NUMBER OF LINES SERVED BY DIGITAL LOOP CARRIER AFFECT THE CLEC'S PROFITABILITY?

A The use of digital loop carrier technology affects CLEC profitability in two ways. First, under the terms of the FCC's *Triennial Review Order*, the ILEC is not obligated to provide unbundled access to the packet switching capability of hybrid fiber-copper loops This provision of the order effectively precludes the CLEC from offering DSL services to those customers whose loops are provisioned using DLC technology. This reduces the revenue potentially available to the CLEC in the wire center to recover its fixed costs. It also may reduce the market share that the CLEC is capable of achieving, particularly among the higher-spending residential customers and business customers, who are more likely to demand broadband data services.

Second, the use of digital loop carrier technology, and particularly next-generation DLC systems, complicates the process of unbundling

loops for use by the CLEC As explained in the testimony of Mr. Webber, the methods proposed thus far for unbundling of loops provided over digital loop carrier systems either are not yet tested, or result in significant quality of service or cost issues for CLECs.

Q. IN WHAT WAYS DO THE PROPORTION OF BUSINESS AND RESIDENCE CUSTOMERS AND THE DEMOGRAPHIC CHARACTERISTICS OF CUSTOMERS IN THE WIRE CENTER AFFECT CLEC PROFITABILITY?

A. Each of these factors affects the revenue that is potentially available to the CLEC in each wire center. Because business customers generally produce more revenue than residential customers under current pricing practices, a larger proportion of business customers means a larger potential revenue stream for the CLEC. Likewise, the demographic characteristics of the wire center may affect the potential revenue available to the CLEC. A wire center with a large proportion of affluent customers, or a wire center with a large proportion of younger, more tech-savvy customers will likely generate more revenue per customer than wire centers without these characteristics.

Q. DR. PLEATSIKAS HAS ARGUED THAT A WIRE CENTER MARKET DEFINITION DOES NOT CAPTURE THE ECONOMIES OF SCALE THAT PERTAIN TO CERTAIN COSTS

INCURRED BY THE CLEC IN PROVIDING SERVICE. DO YOU AGREE?

A. Yes, I agree that certain costs that the CLEC will incur in providing local exchange service using its own switching facilities are not specific to the wire center. Examples would include the fixed cost purchasing and installing switching and signaling facilities, and the development of billing and provisioning systems. The question, however, is whether consideration of the economies of scale that pertain to these cost factors should rule out consideration of the cost differentials that exist between wire centers. I believe that both wire center specific costs and costs that are incurred over a broader area are important considerations for a CLEC considering offering local exchange service using its own switching facilities. However, because the costs of switching, and billing and provisioning systems are incurred on behalf of a relatively much larger pool of customers over which the costs may be spread, they are a less important factor in the entry decision than wire center specific fixed costs, which must be spread over a relatively much smaller number of customers.

To illustrate this point, I have attached a chart as Exhibit MTB-4. This chart illustrates the investment per customer for a local exchange switch, with the assumption that the fixed investment for the switch is $1,000,000, and the per-customer investment is $100. As the chart clearly shows, the economies of scale in the switch are achieved fairly rapidly. By

the time the CLEC is serving a few thousand customers, the rate of decline in the per-customer investment has slowed dramatically, and adding additional customers results in a miniscule decrease in the per-customer investment.

II. REBUTTAL OF THE DIRECT TESTIMONY OF MS. TIPTON (TRIGGERS)

Q. MS. TIPTON STATED IN HER DIRECT TESTIMONY THAT THE "TRIGGERS" ANALYSIS IS A SIMPLE COUNTING EXERCISE – ONCE THE AUTHORITY HAS DETERMINED THAT THREE CARRIERS ARE PROVIDING LOCAL SERVICE TO MASS MARKET CUSTOMERS, IT NEED LOOK NO FURTHER. DO YOU AGREE?

A. Only in part To be sure, once the Authority has determined what sort of carriers are suitable for inclusion in the counting exercise, the counting itself is a simple process. The more challenging aspect of the decision that the Authority faces is in determining which carriers may appropriately be counted. The FCC has identified a number of factors that must be considered in this determination. These include:

(1) Corporate ownership,

(2) Active and continuing market participation;

(3) Intermodal competition; and

(4) Scale and scope of market participation.

I discuss each of these rules, and other pertinent considerations, below. To aid the Authority in reviewing evidence that purports to show that either the retail or wholesale trigger has been met in a particular market, I have also prepared a flowchart that summarizes the requisite analysis. This flowchart is attached as Exhibit MTB-5 to my testimony.

Q. WHAT ARE THE FCC'S RULES WITH RESPECT TO CORPORATE OWNERSHIP?

A The FCC has imposed two separate restrictions on corporate ownership. First, a carrier can only count toward the retail or wholesale trigger in a particular market if that carrier is unaffiliated with the incumbent. *Triennial Review Order*, ¶ 499 Second, to prevent "gaming," carriers affiliated with one another, but not the incumbent, only count as a single carrier toward satisfying the pertinent trigger *Id.* (In both instances, the FCC relied on a definition of affiliation found in Section 3 of the Act (47 U.S.C. § 153(1)). *Id.*, n. 1550). These two requirements appear as the second and third items on the flowchart in Exhibit MTB-5.

Q. WHAT ARE THE FCC'S RULES WITH RESPECT TO A POTENTIAL TRIGGERING CARRIER'S ACTIVE AND CONTINUING MARKET PARTICIPATION?

A. The FCC stresses that potential triggering carriers must be "actively providing voice service to mass market customers in the market." *Id* , ¶ 499. Moreover, the state commission must verify that the competitors in

question have not, for example, filed a notice to terminate service in that market (*Id.*, n. 1556) or provided other evidence demonstrating that they no longer intend to be an active participant in that market. These requirements are reflected in the fourth item in the flowchart in Exhibit MTB-5.

The clear intent of these rules is to ensure that any company counted toward a trigger is an active and continuing participant in the relevant market To give these rules economic meaning, the Authority should require evidence that any company counted toward a trigger is actively soliciting new customers and has, in fact, added new customers *in that market* within the recent past (*e.g* , the most recent month for which data are available).

Q. WHAT ARE THE FCC'S RULES WITH RESPECT TO INTERMODAL COMPETITION?

A. The FCC requires states to consider whether intermodal alternatives are comparable in "cost, quality and maturity" to the incumbent's switched mass-market voice services before counting such alternatives toward the trigger in any market. *Id.*, n. 1549. *See also* ¶ 97. Based on these criteria, the FCC specifically indicated that it did not expect states to count CMRS carriers toward either trigger. *Id.*, n. 1549. The FCC defines CMRS carriers as "any mobile service, as defined in section 3 of the Act, as amended, provided for profit and making interconnection services available to the public " *Id.*, n. 164, citing 47 U S C. § 332(d)(1). This

definition includes, but is not limited to, traditional cellular carriers Similarly, the FCC indicated that fixed wireless has "not proven to be viable or deployable on a mass market scale," implying that fixed wireless services do not meet the "comparable in cost, quality and maturity" standard for inclusion in the trigger analysis *Id.*, ¶ 310. The FCC did, however, leave open the option of counting carriers that use packet switches or soft switches to provide voice services to mass-market customers. *Id.*, n. 1549

To give economic meaning to these rules, I recommend that the Authority place the burden of proof on the ILECs to demonstrate that any intermodal alternative it proposes to count toward the triggers satisfies the "comparable in cost, quality and maturity" standard identified in footnote 1549 to the *Triennial Review Order* I have therefore included as the fifth item in the Exhibit MTB-5 flowchart an evaluation of the incumbent's showing as to the cost, quality and maturity of any intermodal providers proffered as potential triggering companies.

Q. SHOULD CABLE TELEPHONY PROVIDERS BE CONSIDERED POTENTIAL MASS-MARKET TRIGGERING COMPANIES?

A. No As the FCC acknowledged, cable telephony fails to serve the "crucial function" of affording access to the incumbent's loops, (*Id.*, ¶ 439) and therefore "provides no evidence that competitors have successfully self-deployed switches as a means to access the incumbents' local loops, and have overcome the difficulties inherent in the hot cut process." *Id.*, ¶ 440.

Cable telephony's strategy is to "bypass the incumbent LECs' networks entirely." *Id.* This strategy is only available to a single firm in any market because cable TV companies, due to "unique economic circumstances of first-mover advantages and scope economies, have access to customers that other competitive carriers lack." *Id.*, ¶ 310. As a result, neither cable telephony nor CMRS "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." *Id.*, ¶ 446 Any competitive facilities that allow access to some customer locations but not others clearly cannot be regarded as probative evidence of no impairment concerning those customer locations that cannot be reached by the competitive facilities. Cable telephony is at most an alternative to the ILEC's local voice service for the specific customer locations served via the cable company's facilities, which typically do not reach all of the ILEC's mass-market customer locations. (For example, cable facilities frequently do not serve the central business districts in which many mass-market small business customers may be located. *Id.*, n 1349.)

For similar reasons, the FCC determined that the availability of cable telephony does not eliminate impairment with respect to the ILEC's voice-grade loop facilities. *Id.*, ¶¶ 228, 229 and 245. Because cable telephony offers an alternative to the ILEC's mass-market switching

facilities only where it also offers an alternative to the ILEC's loop facilities, it logically follows that cable telephony does not cure impairment with respect to mass-market switching, either.

In addition, cable telephony does not unambiguously fulfill the "cost, quality and maturity" criteria established by the FCC. Cable telephony services (particularly the recent variants provided using Voice over Internet Protocol, or VoIP, technology) are relatively new; it is not yet clear whether most consumers perceive such services to be comparable to local telephone service, especially with respect to reliability issues such as E-911 and backup power in emergencies Thus, I believe that a reasoned analysis disqualifies cable telephony from being considered as a "close enough" substitute for the ILEC's local voice services to be included in the product market for the mass-market switching impairment analysis

Q. WHAT ARE THE FCC'S RULES WITH RESPECT TO THE SCALE AND SCOPE OF MARKET PARTICIPATION?

A The FCC identified specific rules with respect to scale and scope of market participation for wholesale providers and more general guidance with respect to the scale and scope of such participation for retail competitors that self-deploy switching

For a competitor to be counted toward the wholesale trigger in a given market, the carrier must "be operationally ready and willing to provide wholesale service to all competitive providers in the designated

market." *Triennial Review Order*, ¶ 499 (as amended by the FCC's *Errata* released on September 17, 2003). The wholesale carrier need not, however, provide "the full panoply of services offered by incumbent LECs." *Id.*

For retail providers, the FCC provides state commissions with the far more general guidance that, "in circumstances where switch providers (or the resellers that rely on them) are identified as currently serving, or capable of serving, only part of the market, the state commission may choose to consider defining that portion of the market as a separate market for purposes of its analysis." *Id.*, n 1552. In the context of the Authority's investigation, the FCC's general guidance provides for instances in which the Authority may choose to conduct its trigger analysis on a more granular basis than the wire center or, in the alternative, provides guidance as to whether a particular competitor should count toward the trigger in a given wire-center market as defined by the Authority.

The Authority can achieve the same effect either by narrowing the market definition in such a way that the potential triggering companies do in fact offer services to all, or virtually all, customers within the defined market, or by declining to count companies that do not offer services to all, or virtually all, mass-market customers within the geographic market that the Authority adopts. Either approach accomplishes the essential economic purpose of applying triggers in a manner that ensures that all, or virtually all, customers within a given market have significant alternatives.

Q. WHY DO YOU SAY THAT TRIGGERS SHOULD BE APPLIED IN A WAY THAT ENSURES ALL, OR VIRTUALLY ALL, CUSTOMERS WITHIN A GIVEN MARKET HAVE SIGNIFICANT ALTERNATIVES?

A. First and foremost, such an approach is consistent with the pro-competitive goals of the Act and this Authority. To date, UNE-P has proven to be the most successful and widespread vehicle for providing mass-market customers with competitive alternatives to the incumbents' retail local exchange services. By its very nature, UNE-P allows competitors to offer alternatives to each and every customer that the ILEC serves. Eliminating access to unbundled switching is inherently anti-consumer unless the Authority can be very sure that *all* of the customers who can be served via UNE-P can also be served through some alternative form of competitive entry.

Q. IS IT YOUR TESTIMONY THAT THE ILEC MUST DEMONSTRATE THAT POTENTIAL TRIGGERING COMPANIES ARE CURRENTLY OFFERING RETAIL LOCAL EXCHANGE SERVICES TO (OR WHOLESALE SERVICES THAT ALLOW POTENTIAL RESELLERS TO REACH) EVERY SINGLE MASS-MARKET CUSTOMER IN A GIVEN WIRE CENTER?

A. No The Authority should, however, require evidence that: (1) each company counted toward the retail trigger has a demonstrated capability of

holding itself out to provide retail local exchange service to all, or virtually all, mass-market customers within that wire center; and (2) the volumes at which the potential triggering company is presently providing service demonstrate that it has overcome the hot cut barrier to entry that is the basis for the national finding of impairment and all of the other economic and operational barriers to entry that the FCC identified as appropriate topics for consideration in a potential deployment analysis. This means that the company in question must have demonstrated, by the sheer scale and scope of its participation in the market, that it has overcome the operational and technological issues associated with, *e.g* , UNE-L, OSS, collocation, transport and EELs necessary for mass-market entry If that is not unambiguously clear from the nature of the triggering company's operations, then a potential deployment analysis would be necessary to justify a finding of no impairment and no such finding should be made on the basis of the existence of the alleged trigger company in the relevant market. I have included these two evidentiary requirements as the sixth and seventh, respectively, on the flowchart in Exhibit MTB-5.

Q. ARE THERE BROAD CATEGORIES OF POTENTIAL TRIGGERING COMPANIES THAT WOULD FAIL TO MEET YOUR PROPOSED STANDARD OF HAVING A DEMONSTRATED CAPABILITY OF HOLDING ITSELF OUT TO PROVIDE RETAIL LOCAL EXCHANGE SERVICE TO ALL, OR VIRTUALLY ALL, MASS-MARKET CUSTOMERS WITH THE WIRE CENTER (ITEM 6 ON THE FLOWCHART IN EXHIBIT MTB-5)?

A. Yes. As I mentioned in discussing product market distinctions, at least two broad categories come to mind:

(1) Companies that serve small business, but do not serve residential customers; and

(2) Companies that serve customers whose ILEC loop is provided over all-copper facilities, but do not serve customers whose ILEC loop is provided over fiber feeder and IDLC.

Q. WHY DO YOU SAY THAT COMPANIES THAT DO NOT SERVE RESIDENTIAL CUSTOMERS IN A GIVEN GEOGRAPHIC MARKET SHOULD *NOT* BE CONSIDERED AS POTENTIAL "TRIGGERING" COMPETITORS?

A. As I have already explained, residential customers are not identical to small business customers, which in turn are not identical to the medium

and larger businesses that the FCC has included in what it describes as the "enterprise market."

The FCC recognized the "swing" role of small business customers in the distinctions it drew between "mass-market" and "enterprise-market" customers, noting:

> Very small businesses typically purchase the same kinds of services as do residential customers, and are marketed to, and provided service and customer care, in a similar manner Therefore, we will usually include very small businesses in the mass market for our analysis We note, however, that there are some differences between very small businesses and residential customers. For example, very small businesses usually pay higher retail rates, and may be more likely to purchase additional services such as multiple lines, vertical features, data services, and yellow page listings. Therefore, we may include them with other enterprise customers, where it is appropriate in our analysis *Triennial Review Order*, n. 432

This statement, in combination with the FCC's observations on the use of actual marketplace deployment as evidence that barriers to entry are surmountable, suggests that the Authority should allow the empirical evidence to dictate its view of whether residential and small business customers are in the same market for purposes of the trigger analysis If a carrier serves small business customers but not residential customers using its own switch, that very fact implies that there is a meaningful difference between small business and residential customers. If that pattern is repeated, so that multiple carriers serve small business customers but not residential customers using their own switches, the evidence for distinct customer class markets becomes even more compelling.

It would be a grave public policy error to base a finding of no impairment solely or largely on evidence of carriers self-deploying switching to serve small business customers, leaving Tennessee residential customers with no meaningful competitive alternative. The Authority should require evidence that both residential and small business customers have competitive choices before it decides to eliminate CLECs' access to unbundled switching in any geographic market. Thus, a company that is not actively providing residential service with its own switches (*i e.*, one that is only providing business service) should not be counted as a trigger company for mass-market switching.

Q. YOU ALSO SUGGESTED THAT THE AUTHORITY SHOULD CONSIDER WHETHER THE SWITCH-BASED COMPETITOR IS OFFERING SERVICE OVER BOTH ALL-COPPER AND IDLC LOOPS. WHY IS IT IMPORTANT FOR THE AUTHORITY TO CONSIDER THE TYPES OF UNE LOOPS OVER WHICH POTENTIALLY TRIGGERING COMPANIES ARE PROVIDING RETAIL LOCAL EXCHANGE SERVICE?

A. ILECs and CLECs have engaged in a long and contentious battle over the procedures and cost for providing stand-alone unbundled loops to customer locations that the ILEC serves via fiber feeder and IDLC. To date, there is no consensus on a cost-effective means for making such loops available There is, however, no dispute that UNE-P can be provisioned over the same IDLC facilities that the ILEC uses to provide its

own retail services. Unless a potentially triggering company is providing switch-based services to mass-market customers over IDLC as well as all-copper loops, there is no actual marketplace evidence that the competitor has overcome barriers to entry for customer locations served via IDLC. Elimination of access to UNE switching under these circumstances would effectively deny competitive alternatives to the growing number of Tennessee customers served via IDLC.

Q. HOW DOES THE PRECEDING DISCUSSION RELATE TO THE FLOWCHART IN EXHIBIT MTB-5?

A. I have identified two specific "screens" that should be considered during the analysis that occurs as part of Item 7 in the flowchart. The first "screen" asks whether the potential triggering carrier serves both residential and small business customers. The second asks whether the potential triggering carrier serves customers over both all-copper and IDLC loops. The Authority should not consider the triggers to be satisfied unless all customer groups within the identified market can be reached by at least three retail or two wholesale providers that deploy their own switches.

Q. MS. TIPTON HAS IDENTIFIED A NUMBER OF CLECs THAT SHE CLAIMS MEET THE SELF-PROVISIONING TRIGGER. DO YOU AGREE THAT THESE CARRIERS SHOULD BE COUNTED AS TRIGGERING COMPANIES?

A. No. Several of the carriers cited by Ms. Tipton clearly do not actively market services to residential customers. As I explained in my discussion of the trigger "screens" above, these companies should be excluded from the analysis. These companies are: **** PROPRIETARY INFORMATION****

Q. HOW DID YOU DETERMINE THAT THESE COMPANIES ARE NOT ACTIVELY MARKETING SERVICES TO RESIDENTIAL SUBSCRIBERS?

A. Very simply, I examined the marketing materials placed by these companies on their web sites. For each of the above companies, the description of services offered plainly indicated that their focus was on the provision of services to business customers

I have attached to my rebuttal testimony Exhibit MTB-6. This exhibit reproduces relevant pages from the web sites of **** PROPRIETARY INFORMATION****

Q. DO THE COMPANIES YOU HAVE DISCUSSED THUS FAR EXHAUST THE LIST OF TRIGGERING COMPANIES CITED BY BELLSOUTH?

A No. I was unable to determine the extent to which **** PROPRIETARY INFORMATION**** actively markets local exchange services to residential customers using UNE-L

Q. ARE THERE COMPANIES OTHER THAN THE ONES THAT YOU HAVE CITED THAT FAIL TO MEET THE CRITERIA FOR TRIGGERING CLECs?

A. Yes, ****PROPRIETARY INFORMATION****

Q. DOES OTHER EVIDENCE EXIST THAT SHOWS THE EXTENT OF PARTICIPATION IN THE MARKET BY THE COMPANIES THAT BELLSOUTH CITES AS TRIGGERING COMPANIES?

A. Yes. In response to AT&T's Interrogatory Item No. 115, BellSouth provided a listing of the types and quantities of unbundled loops purchased by companies that BellSouth claims are triggering companies. While it is not clear that the lines shown in these data are limited to those lines used to provision mass market local exchange service, an examination of this information shows that these companies constitute at best a minimal and declining presence in the two BellSouth-defined markets where BellSouth claims the triggers are met.

The data show that the "trigger" companies cited by BellSouth purchase voice grade lines (2-wire loops and DS0 EELs) in 3 of the 7 wire centers in the BellSouth-defined Chattanooga Zone 1 market, 3 of the 8 wire centers in the BellSouth-defined Knoxville Zone 1 market, 9 of the 14 wire centers in the BellSouth-defined Memphis Zone 1 market, and 11 of the 19 wire centers in the BellSouth-defined Nashville Zone 1 market. In only one wire center in the Chattanooga Zone 1 do the CLECs have more than four percent of the total lines in the wire center – in the other two wire centers they have less than two percent of the lines. For the Knoxville Zone 1 market and in the Memphis Zone 1 market, CLECs have less than two percent of the lines in all of the wire centers in which they have a presence, and in the Nashville Zone 1 market, they have less than two percent of the lines in most of the wire centers, exceeding three percent in only two. Overall, the CLECs cited by BellSouth have 1.91% of the lines in the 3 wire centers in Chattanooga Zone 1, 0.69% of the lines in the 3 wire centers in Knoxville Zone 1, 1.15 % of the lines in the 9 Memphis Zone 1 wire centers, and 1.32% of the line in the 11 Nashville wire centers

Moreover, the presence of the claimed "trigger" companies has been steadily declining in the Chattanooga and Knoxville Zone 1 markets Over the 19-month period for which BellSouth reported, the number of UNE loops purchased by the CLECs has declined in most of the wire centers where the CLECs have a presence in these two markets. By

November of 2003, the companies represented in the data had only 57% of the lines that they had in May of 2002 in Chattanooga and 77% of the May 2002 lines in Knoxville. While the CLECs exhibited some growth in the Memphis and Nashville markets, they still constitute a small portion of the total market, as noted above Exhibit MTB-8 displays graphically the growth trends in "trigger" company voice grade lines over this period.

Q. CAN YOU SUMMARIZE YOUR CONCLUSIONS REGARDING THE TRIGGER EVIDENCE PRESENTED BY BELLSOUTH?

A. Yes Of the eight companies cited by BellSouth as satisfying the self-provisioning trigger, I have been able to determine that five obviously do not meet the criteria for a triggering company. I have been unable to determine whether or not the remaining company should qualify as triggers. I have attached a summary of my conclusions as Exhibit MTB-9 Even if the remaining company provides service both to residential and small business mass market customers, the Authority should consider that the triggering companies represent only a very small and declining portion of the market in assessing the ability of this company to provide a realistic competitive alternative to BellSouth.

III. REBUTTAL OF THE DIRECT TESTIMONY OF MR. STEGEMAN (POTENTIAL DEPLOYMENT MODEL)

Q. BELLSOUTH HAS PRESENTED THE BELLSOUTH ANALYSIS OF COMPETITIVE ENTRY ("BACE") MODEL THROUGH THE TESTIMONY OF MR. STEGEMAN IN THIS PROCEEDING. WHAT IS YOUR UNDERSTANDING OF THE PURPOSE OF THIS MODEL?

A. According to Mr. Stegeman and Dr Aron, the model is presented to show the feasibility of market entry to CLECs seeking to provide local exchange service using their own switches in combination with certain unbundled loop, transport, and collocation facilities obtained from the ILEC.

Q. HAVE YOU BEEN ABLE TO ASSESS THE MODEL'S METHODOLOGY AND CALCULATIONS?

A. No, I have not. The model presented by BellSouth is a compiled Visual Basic application. As such, none of the formulae or intermediate results of calculations are accessible or viewable. Consequently, at this time the model is a "black box." I have only been able to view the effect that changes in inputs have on the model's outputs.

Q. HOW DO THE MODEL'S INPUTS AFFECT THE MODEL'S OUTPUTS?

A. In testing the sensitivity of the model to various input changes, I was surprised by how insensitive the model's outputs are to the model inputs. For example, I tested the model by changing inputs that should have a

dramatic impact on CLEC profitability In particular, the customer churn rate and the customer acquisition cost should be significant factors in determining profitability. If the customer churn rate is high, or if the customer acquisition cost is high, the CLEC will likely be unable to recover customer specific costs from the revenue derived from each customer during the time that the customer remains with the CLEC. The CLEC's cost of capital and the CLEC's market share likewise should be significant factors in determining profitability, in that they will affect the CLEC's ability to recover its capital expenditures for collocation and other capital equipment, and the nonrecurring charges associated with establishing collocation facilities and transport facilities.

Surprisingly, varying these inputs did little to change the net present value of providing service in BellSouth wire centers. Using BellSouth's default inputs, but turning off certain filters used by the model that eliminate unprofitable market segments, the BACE estimated that net present value would be negative for mass market customers in 146 of 198 wire centers in BellSouth territory. Increasing the cost of capital from BellSouth's default value of 13.09% to 15% slightly reduced CLEC profitability, but caused only three additional wire centers to produce negative net present value. Changes in the CLECs market share had a somewhat greater effect on model results. Decreasing market share from BellSouth's default value to 10% in all mass market segments increased the number of negative net present value wire centers from 146 to 169.

Decreasing market share further to 5% in all mass market segments resulted in a further increase in negative net present value wire centers to 184.

Manipulating the customer churn rates also had a surprisingly small effect on the model results. Keeping the cost of capital at 15%, increasing monthly customer churn from BellSouth's default values to 5% across all mass market customer segments increased the number of negative net present value wire centers from 146 to 152 Increasing churn further to 6.5% had the surprising effect of *reducing* the number of unprofitable wire centers to 36. I cannot account for this anomalous result – with all other inputs held constant, increasing CLEC churn rates should reduce profitability, not increase it.

I have attached to this testimony Exhibit MTB-10, which presents the results of several sensitivity tests that I performed on the BACE model

Q. WHAT DO YOU CONCLUDE FROM THE SENSITIVITY TESTS THAT YOU HAVE PERFORMED?

A. Without access to the model algorithms and the results of intermediate calculations, I cannot say with any certainty whether the model is appropriately calculating the costs and revenues pertinent to the potential deployment analysis. While, with one or two exceptions that I discuss below, I cannot fault the general approach outlined in Mr Stegeman's

testimony and in the model documentation, I find it curious that factors that are known to have a significant impact on CLEC profitability do not seem to have a significant impact on CLEC profitability as predicted by the model.

Q **DOES THE MODEL ACCURATELY PORTRAY THE CHALLENGES FACED BY CLECs IN PROVIDING LOCAL EXCHANGE SERVICES UNDER SUCH CIRCUMSTANCES?**

A. No, it does not, in its default configuration. An analysis of the inputs used in the model and the overall operation of the model reveals a number of aspects of the model that cause it to present misleading and inaccurate results

Q. **HOW DOES THE MODEL PRESENT MISLEADING RESULTS IN ITS DEFAULT CONFIGURATION?**

A. A part of the problem is that the BACE, operated with default inputs, discards certain markets where CLEC entry is, on the model's own terms, unprofitable. The default inputs used in the model cause the model to discard. 1) LATAs for which CLEC entry is unprofitable, 2) markets for which CLEC entry is unprofitable, and 3) customers that may not profitably be served The results of these exclusions is that the model portrays CLEC entry as more profitable than is actually the case, under the model's own terms.

A second aspect of the problem lies in the market definition proposed by BellSouth and in the way that the model aggregates results to conform to this market definition. The model performs this aggregation in two ways. First, although the model calculates results separately for the mass market and enterprise market in each wire center, it aggregates results for these two product markets into a single value. Second, although the model operates fundamentally at the level of the individual wire center, it aggregates the results for all wire centers in each of BellSouth's proposed market areas into a single value. The result is that the model result presented by BellSouth obscures differences in the profitability of the enterprise and mass markets, and in the profitability of each wire center in a manner that in turn obscures factors that enter into each CLEC's decision whether or not to enter a given market. Exhibit MTB-11 to this testimony presents the results of the BACE model, using BellSouth's default inputs with the exclusionary filters turned off, for the individual wire centers in each of BellSouth's proposed markets. Note that in the Chattanooga Zone 1 "market," one of the BellSouth-defined markets for which no impairment is claimed by Dr. Aron, one of the wire centers yields negative net present value to a prospective CLEC The same is true in the Knoxville, Memphis, and Nashville Zone 1 "markets." BellSouth's proposed market definition obscures pockets of unprofitability where BellSouth's own analysis shows that it would be unprofitable for a CLEC to provide service there in a UNE-L environment If the market

definition proposed by BellSouth is adopted, customers located in those wire centers could be left without competitive alernatives.

Note also that in each of the wire centers where mass market service would be unprofitable in the Chattanooga, Knoxville, Memphis and Nashville Zone 1 "markets" the BACE results, as presented by BellSouth, would lead one to a conclusion that the wire center is profitable for a potential CLEC entrant (the wire center as a whole is profitable). This conclusion is only reached, however, because the large net present value derived from serving enterprise customers offsets the loss that the CLEC would incur from serving mass market customers While this issue does not affect many wire centers using BellSouth's default input assumptions, the effect is much more pronounced when the input assumptions used result in a lower profitability for mass market customers.

Q. ARE YOU SAYING THAT IT IS INAPPROPRIATE TO CONSIDER THE CASE WHERE A CLEC SERVES BOTH ENTERPRISE AND MASS MARKET CUSTOMERS?

A. No, I am not. In fact, the FCC's *Triennial Review Order*, at ¶519 requires that the potential deployment analysis consider this case What is inappropriate in BellSouth's presentation is that it suggests that a CLEC would offer services to mass market customers where it would not be profitable to do so. The appropriate consideration is whether the

simultaneous offering of enterprise and mass market services reduces cost and increases profitability for each market relative to the offering of service to either market separately. In other words, the relevant question is whether a carrier offering enterprise services would gain additional economies of scale by also offering mass market services, or *vice versa*. No rational firm, however, would provide service to a market if that service offering would reduce its overall profitability.

IV. REBUTTAL OF THE DIRECT TESTIMONY OF DR. ARON (POTENTIAL DEPLOYMENT)

Q. DR. DEBRA ARON HAS PRESENTED TESTIMONY ENDORSING THE APPROACH TAKEN BY THE BACE IN ESTIMATING THE CLECS' PROFITABILITY IN OFFERING LOCAL EXCHANGE SERVICE USING THEIR OWN SWITCHES. DO YOU DISAGREE WITH DR. ARON'S STATEMENTS IN THIS REGARD?

A. As I have already stated, I do not disagree with the general approach to estimating CLEC profitability outlined in Dr. Aron's and Mr. Stegeman's testimony. I also have stated concerns with the manner in which this approach is implemented by the model.

Q. DR. ARON ALSO PROPOSES A NUMBER OF INPUTS TO THE MODEL THAT SHE CLAIMS SHOULD BE USED IN THE POTENTIAL DEPLOYMENT ANALYSIS. DO YOU AGREE WITH DR. ARON'S RECOMMENDATIONS?

A. No, I do not. Many of the input assumptions proposed by Dr. Aron for use in the BACE model are unrealistic, and represent a quite optimistic view of the challenges that would face CLECs in a post-UNE-P environment

Q. AS JUSTIFICATION FOR CHOOSING VALUES THAT DO NOT REFLECT CURRENT CLEC EXPERIENCE, DR. ARON STATES THAT THE FACT THAT SEVERAL CLECS HAVE GONE BANKRUPT SUGGESTS THAT "...ON AVERAGE, CLECS DO NOT HAVE OPTIMALLY EFFICIENT OPERATIONS." DO YOU AGREE?

A. Certainly not. If anything, it should suggest the opposite Any firm faced with bankruptcy will do anything it can to cut operating expenses in an effort to remain solvent. This may not be an "optimally efficient" mode of operation, but it would be suboptimal to the low side; the operating expense would not reflect the level of expense that would be expected for an efficient firm in sustainable operation.

Q. DR. ARON RECOMMENDS THAT THE ULTIMATE MARKET SHARE FOR THE EFFICIENT CLEC BE SET AT 15% OVER ALL MARKET SEGMENTS. DO YOU AGREE WITH THIS RECOMMENDATION?

A. No, I do not Dr. Aron cites penetration levels achieved by CLECs using UNE-P to provide local exchange service and penetration levels by cable operators achieved among customers that subscribe to cable as

justification for her recommendation I would note first that the 15% market share number cited for CLEC market penetration is for all CLECs in aggregate, not for individual CLECs (with the exception of the penetration cited for AT&T in New York). I also would note that the cable penetration figures are for penetration among only those customers that are subscribers to the cable system, with a total subscriber base only of those subscribers for whom cable services are available – not the entire universe of telephone subscribers. Nationwide, CLECs, *in aggregate*, have achieved a market penetration to date of just under 15%. If the FCC has established as a benchmark the presence of three unaffiliated retail providers of local exchange service, this would imply a market share for each carrier of only 5%, assuming each is equally successful in winning customers' business

In view of the challenges that will face CLECs in moving from a UNE-P based service to a service based on self-provisioning of the switching function, and in view of the increasingly aggressive winback activities being pursued by ILECs, including BellSouth, I believe that a 15% market share projection is far too aggressive. The ultimate market share that an individual CLEC may achieve is unknown and unknowable, depending as it does on many uncertain factors, including the price that the CLEC is able to establish relative to the ILEC, the quality of service that the CLEC is able to provide (a factor that is only partly under the control of the CLEC, because the loop and transport components of the

service will remain under the control of the ILEC, from a technical perspective), the ability of the ILEC to efficiently manage the hot cut process, and the ability of the CLEC to bring new products and service capability to the market and the cost of doing so. Additionally, as I have discussed earlier in this testimony, the FCC's decision to preclude CLECs from obtaining access to the broadband data capabilities of hybrid fiber/copper loops means that CLECs will be unable to serve a large and increasingly important segment of the market, particularly higher-spending residential and small business customers, who will demand broadband data services.

Q. DR. ARON ALSO RECOMMENDS A CHURN RATE OF 4% PER MONTH FOR RESIDENTIAL CUSTOMERS. DO YOU AGREE WITH THIS RECOMMENDATION?

A. No, I do not. The same factors that I have discussed with regard to the market share that will be attainable by CLECs in the post-UNE-P market apply as well to the churn rate that CLECs will experience. Any input to the model that relies exclusively on the experience of UNE-P based CLECs will likely understate the actual churn rates that will be experienced going forward. Again, the actual churn rate is unknown and unknowable at this time. In making its findings regarding potential deployment, the Authority should consider a range of possibilities, including scenarios that increase the level of churn over historical levels.

Q. DR. ARON CITES SEVERAL ANALYST'S REPORTS TO SUPPORT HER RECOMMENDED CUSTOMER ACQUISITION COST OF $95. DO YOU AGREE WITH THIS RECOMMENDATION?

A. No, I do not Dr Aron cites a number of sources, including (at the low end) a reference to ZTel's estimated customer acquisition costs that does not include advertising. She goes on to claim that an efficient UNE-L based CLEC would likely incur lower customer acquisition costs than current UNE-P based CLECs.

In supporting a customer acquisition input of $130, Dr. Gabel cites in notes attached to his model a range of estimates from the same types of sources cited by Dr Aron These estimates range from $80 to more than $400 per customer, a range higher at the low end and much higher at the high end than the estimates provided by Dr. Aron.

Again, customer acquisition cost in a post-UNE-P market is an unknown and unknowable quantity Some of the factors that I already have discussed with regard to market share and churn also will have an impact on customer acquisition costs, particularly the price that the CLEC will be able to establish relative to the ILEC's price, the aggressiveness of ILEC winback efforts, and the quality of service that the CLECs are able to attain. Given that the range of estimates for current CLEC customer acquisition cost varies so widely, I believe that it would be prudent for the

Authority to consider a range of scenarios with regard to customer acquisition costs, including scenarios where customer acquisition costs in the post-UNE-P market substantially exceed those for UNE-P based CLECs.

V. RESULTS OF RUNNING BELLSOUTH MODEL WITH MORE REALISTIC INPUTS, AND WITH THE CORRECT WIRE CENTER MARKET DEFINITION.

Q. DR. BRYANT, IN YOUR DIRECT TESTIMONY YOU PRESENTED THE RESULTS OF THE IMPAIRMENT ANALYSIS TOOL THAT YOU SUBMITTED USING A RANGE OF POSSIBLE INPUTS, SHOWING THE RESULT FOR A NUMBER OF POSSIBLE SCENARIOS. HAVE YOU PERFORMED A SIMILAR ANALYSIS USING THE BACE?

A. Not in the same way. Because the impairment analysis tool calculates results relatively quickly, it was possible to evaluate several hundred randomly-generated scenarios in a relatively short period of time. The BACE is a more complex model, and takes approximately 40 minutes to produce results for any set of specified inputs. Due to the short time frames in this proceeding and the press of similar proceedings in other states, I was not able to produce the same type of analysis using the BACE as I presented using the impairment analysis tool.

I have already presented in Exhibit MTB-10 a summary of the results of a sensitivity analysis that I performed for several individual user

inputs to the model. I have also performed a series of runs of the model using combinations of certain key variables. The results of this analysis are shown in Exhibit MTB-12. Each column in this exhibit presents the model results for the mass market customers in each wire center. For all model runs, BellSouth's exclusionary filters were turned off. The column header in each of the columns shows the user inputs that were changed from BellSouth's default values.

Q. IN THIS EXHIBIT, YOU USE MONTHLY REVENUE OF $49.52. WHAT DOES THIS VALUE MEAN?

A MCI recently has obtained data from TNS Telecoms on the monthly average residential telecommunications spending by household for each wire center in Tennessee. This is the same source of information that is used by the FCC in compiling its annual statistics on telecommunications expenditures, and is based on a survey of actual customer bills. The $49.52 value that I used is the weighted average household spending for local and long distance services, and includes the subscriber line charge and taxes As such, it likely overstates the actual current spending by residential consumers on a per-line basis. This value was applied only to the residential revenue inputs in the BACE model. Business revenues were left at BellSouth default values

Q. WHAT DOES YOUR ANALYSIS SHOW?

A. It is difficult to draw conclusions from my analysis. Due to the lack of sensitivity of the model to certain key inputs, and the occasional anomalous results that the model produces, I do not have confidence in the ability of the model to produce valid results. However, just as in the analysis that I presented in my direct testimony, the results are both highly variable among wire centers and overall quite dependent upon the inputs values chosen. Exhibit MTB-11 shows that, depending upon the input values chosen, CLECs are not profitable in varying numbers of wire centers in BellSouth's territory in Tennessee.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS REGARDING THE BACE MODEL.

A Having had only a limited amount of time to work with the model, and without access to the source code or intermediate calculations produced by the model, I am not in a position at this time to either endorse or reject the model itself. As I have discussed in this testimony, there are aspects of the model's operation and the relationship between inputs to the model and the outputs the model produces that raise serious questions as to whether the model accurately and reliably calculates the costs and revenues that are pertinent to a CLEC's decision to provide local exchange service using self-provisioned switches

I would emphasize again that many of the inputs to the model are uncertain – it cannot be known with any certainty what costs would be

incurred and what revenues would be available to CLECs in a post-UNE-P environment The best that can be said, whatever model is used, is that under some sets of assumptions, CLECs can be profitable in some wire centers in Tennessee Under other sets of assumptions, CLECs are not profitable in any wire center in Tennessee. Given this uncertainty, the Authority cannot conclude that CLECs are not impaired in any market in Tennessee.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

Investment Per Customer - Local Switching

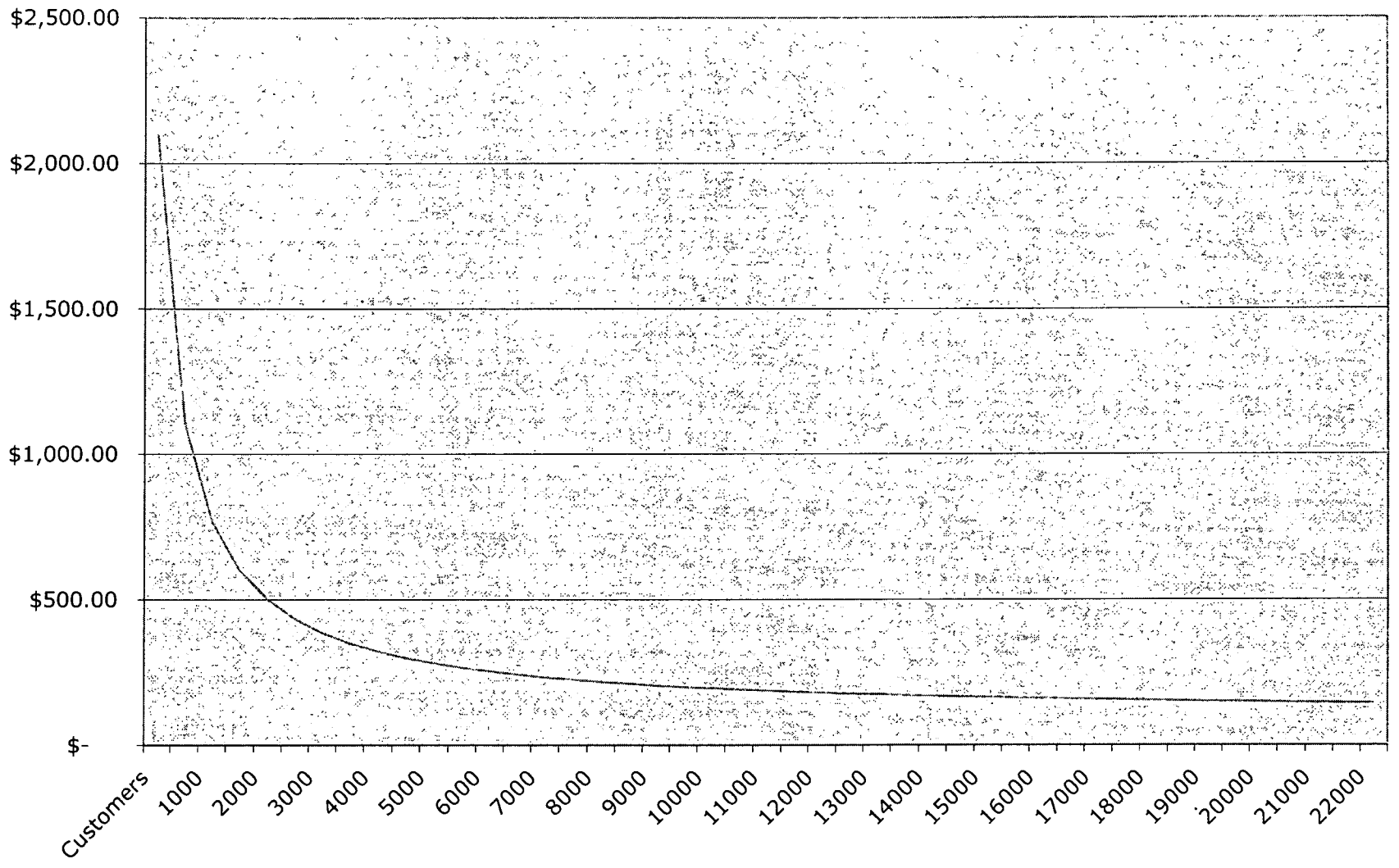

Exhibit MTB-5
Retail Trigger Criteria Flowchart

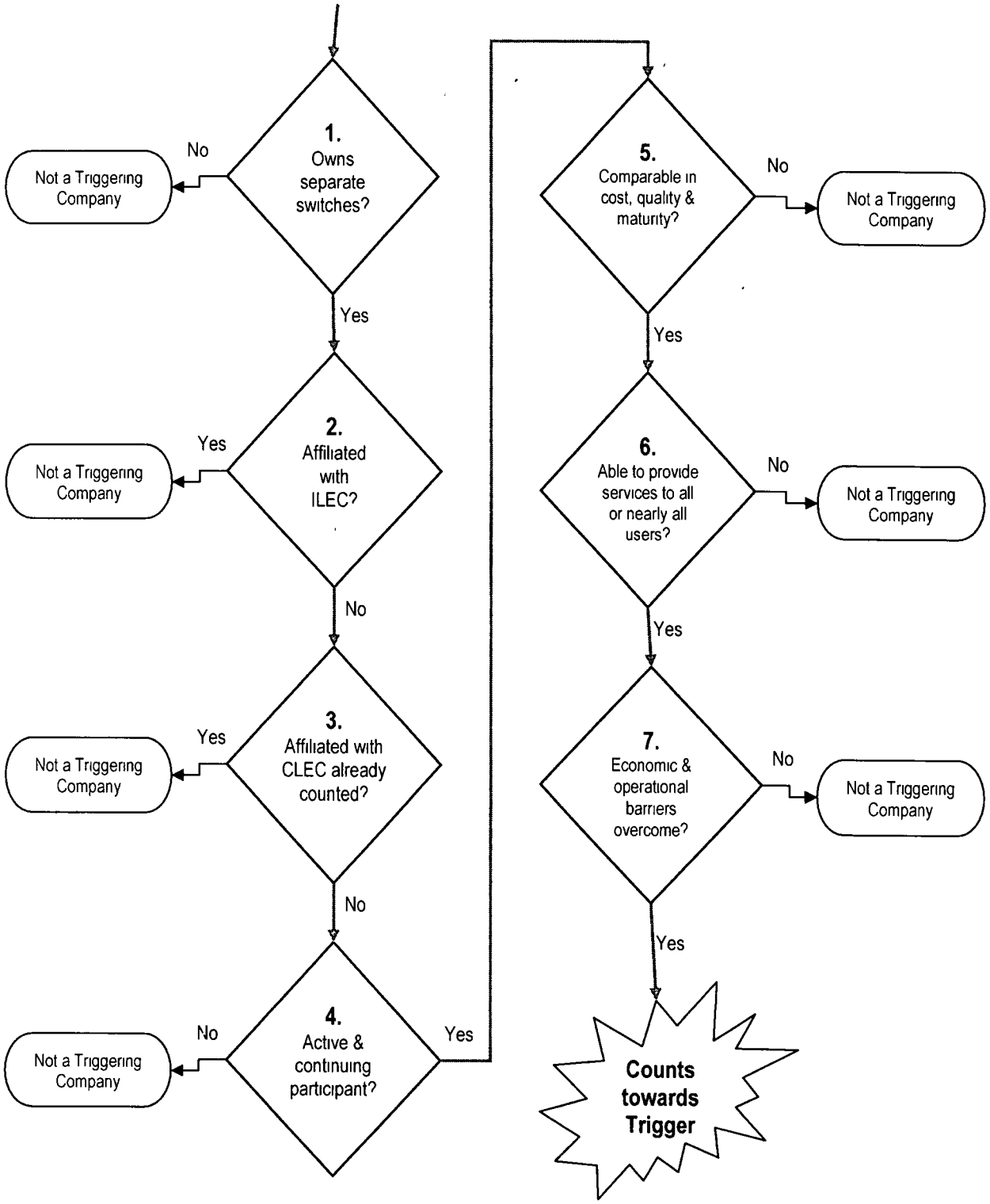

EXHIBIT MTB-6

THIS EXHIBIT CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION

EXHIBIT MTB-7

THIS EXHIBIT CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION

EXHIBIT MTB-8

THIS EXHIBIT CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION

EXHIBIT MTB-9

THIS EXHIBIT CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION

Model Assumptions	Number of Wire Centers with Negative Net Present Value	% of Wire Centers with Negative Net Present Value
BST Default - No Exclusions	146	74.9%
CLEC Capital Cost @ 15%	149	76.4%
CLEC Capital Cost @ 17%	149	76.4%
Monthly Churn (res) at 5%, Capital Cost at 15%	152	77.9%
Monthly Churn (res) at 6.5%, Capital Cost at 15%	36	18 5%
Monthly Churn (res) at 8.33%, Capital Cost at 15%	177	90.8%
Capital Structure 50/50	147	75.4%
Mkt Share all MM segment 10%, slow penetration	169	86 7%
Mkt Share all MM segment 5%, slow penetration	184	94.4%
Res Sales cost @ $140	158	81.0%

EXHIBIT MTB-11

THIS EXHIBIT CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION

EXHIBIT MTB-12

THIS EXHIBIT CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION