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Issues: Cost Issues
Witness: Craig Conwell
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Sponsoring Party: Southwestern Bell Telephone, L.P., d/b/a AT&T Missouri
Case No: TT-2006-0474

SOUTHWESTERN BELL TELEPHONE, L.P.,

d/b/a AT&T MISSOURI

CASE NO. TT-2006-0474

REBUTTAL TESTIMONY

OF

W. CRAIG CONWELL

Greer, South Carolina
September 26, 2006

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BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of McLeodUSA Telecommunications Service, Inc.'s Tariff Filing to Increase its Missouri Intrastate Access Rates.	))))	Case No. TT-2006-0474 Tariff No. JC-2006-0789

AFFIDAVIT OF W. CRAIG CONWELL

STATE OF SOUTH CAROLINA)
)
COUNTY OF GREENVILLE)

I, W. Craig Conwell, of lawful age, being duly sworn, depose and state:

1. My name is W. Craig Conwell. I am presently self employed as an independent consultant, specializing in telecommunications cost analysis.

2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

W. Craig Conwell

Subscribed and sworn to before me this 25 day of September, 2006.

Notary Public

My Commission Expires: January 17, 2013

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INTRODUCTION AND QUALIFICATIONS

Q. Please state your name, business address and employer.

A. My name is W. Craig Conwell. My business address is 405 Hammett Road, Greer, South Carolina. I am self employed as an independent consultant, specializing in telecommunications cost analysis.

Q. On whose behalf are you testifying in this case?

A. I am testifying as the cost witness for AT&T Communications of the Southwest, Inc. and AT&T Missouri[1] (collectively, the "AT&T Companies") in connection with Case No. TT-2006-0474. This case addresses a proposed tariff (P.S.C. MO No. 6) filed with the Missouri Public Service Commission ("the Commission") by McLeodUSA Telecommunications Services, Inc. ("McLeodUSA") designed to increase its intrastate access rates. The Commission subsequently suspended the proposed tariff and granted intervention to the AT&T Companies so that the proposed rates and underlying cost support could be investigated.[2]

Q. Please describe your educational background.

A. I have a Bachelors degree (1972) and Master of Science degree (1974) in Industrial Engineering from Auburn University in Auburn, Alabama.

[1] Southwestern Bell Telephone, L.P., d/b/a AT&T Missouri will be referred to as "AT&T Missouri." It previously conducted business as "SBC Missouri."

[2] "Order Further Suspending Tariffs, Granting Intervention and Scheduling a Conference," Case No. TT-2006-0474, MO PSC, Issued 06/23/06.

Q. Please describe your work background.

A. I have included as Exhibit WCC-1 a copy of my current resume. I have over 30 years of experience in the telecommunications industry, with a broad background in telecommunications costs analysis as an employee of the Bell System, with Arthur Andersen & Co. in its telecommunications consulting practice, and for the past ten years as an independent consultant.

In recent years, I have been extensively involved in negotiations and arbitrations of reciprocal compensation rates between incumbent local exchange carriers ("ILECs") and wireless carriers. I have analyzed numerous ILEC cost studies for compliance with the FCC rules for Total Element Long Run Incremental Costs ("TELRIC"), and I have testified as an expert cost witness on behalf of wireless carriers in one or more arbitrations in five states.

I also was involved on behalf of the AT&T (previously SBC) local exchange carriers in the arbitrations establishing rates for unbundled network elements and collocation. I have provided expert testimony on one or more occasions in 12 states and Canada. Over the years, I have developed cost models, participated in the design of telecommunications cost accounting systems, and taught service cost courses for the United States Telephone Association and telephone company staffs.

Q. Do you have experience with the type of cost study produced by McLeodUSA in support of its proposed access rates?

A. Yes, the McLeodUSA cost study claims to determine Total Service Long Run Incremental Costs ("TSLRIC"), which their cost witness, Mr. John Balke, described in his pre-filed direct testimony as the same as TELRIC.[3] I previously described my experience in arbitrations to determine unbundled network element rates and reciprocal compensation rates. The cost studies in these cases were based on the TELRIC methodology. I am very familiar with the FCC rules at 47 C.F.R. 51.505 and 51.511 defining the methods for TELRIC, as well as the detailed cost methods, assumptions and data necessary to implement these rules.

I have reviewed dozens of TELRIC studies produced by incumbent local exchange carriers (ILECs), competitive local exchange carriers (CLECs) and other carriers for compliance with the FCC rules and testified before State commissions as a cost expert on these matters. I have analyzed numerous TELRIC models, including the HAI model (versions 5.0a and 5.3), the AT&T Collocation Cost Model, the AT&T Non-Recurring Cost Model, the models developed by Southwestern Bell Telephone Co. ("SWBT") and models of various consultants in the telecommunications industry. In addition, I have assisted in the design of TELRIC models and developed TELRIC benchmarks for switching and transport network elements. It is fair to say that a significant portion of my consulting work over the past ten years (since the Telecommunications Act and

[3] "Direct Testimony of John Balke, on behalf of McLeod Telecommunications Services, Inc.," Case No. TT-2006-0474, 08/25/06, p. 5/101-106.

the establishment of FCC rules implementing requirements of the Act) has dealt with TELRIC and incremental cost analysis.

Q. Have you testified previously before the Missouri Public Service Commission?

A. Yes, I testified on behalf of Southwestern Bell Telephone Co. in the original arbitration of rates for unbundled network elements in Case No. TO-97-40, on behalf of T-Mobile USA in a reciprocal compensation arbitration in Case No. IO-2005-0468 and on behalf of T-Mobile USA and Cingular Wireless in another reciprocal compensation arbitration in Case No. TO-2006-0147.

Q. What is your consulting engagement with the AT&T Companies in this case?

A. The AT&T Companies engaged me to review the cost study produced by McLeodUSA supporting its proposed access rate increase. The purpose of the review was to determine whether the cost study produces reasonable estimates of the costs McLeodUSA incurs in providing access services. Recognizing that McLeodUSA is proposing to substantially increase its existing rates, the AT&T Companies wanted to know whether McLeodUSA's costs justified such an increase.

SUMMARY OF TESTIMONY

Q. Please summarize the main points of your testimony.

A. In my testimony, I recommend that the Commission reject McLeodUSA's proposed increases to its intrastate switched access rates. I base this recommendation on the following:

- After reviewing the McLeodUSA cost study, I found methods, assumptions and input data that cause the study to overstate the Company's forward-looking costs for access service. To the extent McLeodUSA is to set its rates at costs, this means the proposed rates are too high.
- McLeodUSA has not met the "burden of proof" to substantiate key assumptions and input data expected of a sponsor of TERLIC studies as the basis for establishing rates. For example, certain plant investments and expenses, such as aggregation facilities and switch trunk investments, collocation "build-out" costs and collocation expenses, are not documented in terms of how they were derived. Likewise, quantities of plant, such as AnyMedia shelves and switch trunks, are not supported. In key instances, the study fails to show that resource costs are current or forward-looking, that costs are entirely attributable to access and other switched services, and that plant quantities reflect efficient network configurations.
- Setting aside the lack of adequate documentation, there are numerous issues in the study, where it either does not comply with TELRIC rules or contains erroneous input data or computations. As a general matter, utilization levels of plant and other resources are low. This is caused by over-sizing network

elements or not basing per-unit costs on projected demand over a reasonable period, when utilization levels are higher. Some key input values are dubious; *e.g.*, economic lives (too short), the cost of equity (too high), operating expense factors (too high), the common cost factor (too high) and others. Exhibit WCC-2 summarizes the primary issues found in the cost study. These issues improperly inflate McLeodUSA's proposed rates.

- I have provided recommendations for correcting McLeodUSA's cost study on these issues and estimated the effect of such corrections on the proposed rates. In some cases, specific recommendations cannot be made because of the lack of supporting information in McLeodUSA's cost study. This failure to substantiate claimed input values in its cost study is reason alone for the Commission to reject the proposed rates.
- Nevertheless, the corrections that I have made show that McLeodUSA's access service costs are recovered by its existing rates and that there is no need for a rate increase. The Company's existing local switching rate is **__ _____** than its costs. When the costs of aggregation facilities, which do not appear to be usage-sensitive and recoverable in the switching rate, are removed from McLeodUSA's switching costs, the existing rate is **_____** than costs. Likewise, local transport rates are **_____ _____**than costs, depending on the transport distance.[4]

[4] "Missouri Intrastate Access Services Tariff," McLeodUSA Telecommunications Services, Inc., P.S.C. MO. No. 3, issued 04/05/2000, original sheet no. 61, sections 5.1.B and 5.1.C. Local Switching (LS2 – Feature Group D) - $0.008480 per access minute. Local Transport - $0.0050, $0.0077, $0.0162 and $0.0274 per access minute for call miles of 0-1, 1-25, 25-50 and over 50, respectively.

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See Tables 3 and 4 on pages 67 and 68 for corrected costs and comparisons of these costs versus existing rates.

THE ROLE OF THE COST STUDY AND MCLEODUSA'S BURDEN OF PROOF

Q. What is the role of McLeodUSA's cost study in this case?

A. AT&T Missouri's Motion to Suspend and Investigate Tariff, which initiated this case, quoted the Commission's conclusions in Case No. TO-99-596 regarding the way in which petitions for access rate increases would be determined. The Commission stated as follows:

> The parties also raised questions concerning the possibility that a CLEC might propose access rates higher than those of the directly competing LEC. While all of the parties agreed that a CLEC may petition the Commission for authority to set rates in excess of the cap, they did not agree on the standard by which such petition should be determined. … The Commission concludes that Chapter 392, RSMo, requires that any such petitions be determined on a case-by-case basis. While costs are one important factor to be considered, that chapter mandates the consideration of other factors as well." [5]

Given this, AT&T Missouri gave its position in the Motion as:

> While a CLEC, under the Commission's order, may petition the Commission for authority to set rates in excess of those of its directly competing ILEC, such rates must be supported by costs, among other factors.[6]

Therefore, McLeodUSA must demonstrate through a valid cost study that its forward-looking costs exceed the rate cap (the rates of the large ILEC within its

[5] "AT&T Missouri's Motion to Suspend and Investigate Tariff," Tariff No. JC-2006-0789, 06/15/06, p. 4.

[6] *Id*., at pp. 4-5.

serving area, *i.e.*, AT&T Missouri) and that increases in rates to the level of those in its proposed tariff are necessary to recover costs. The cost study is important for this purpose.

Q. What is McLeodUSA's burden of proof in demonstrating that an increase in access rates is necessary?

A. Obviously, the results of its cost study must show that a rate increase is cost-justified. However, I believe McLeodUSA must go further than this. It has the burden to prove that the *methods*, *assumptions* and *input data* used in its cost study are valid and reasonable. If they are not, the cost study results are incorrect, and they cannot be used to justify a rate increase.

Q. What cost method did McLeodUSA use in its study?

A. Mr. Balke stated in his pre-filed direct testimony that McLeodUSA's Network Usage Cost Analysis ("NUCA") model, which was used for the cost study, "is designed to generate Total Service Long Run Incremental Costs ("TSLRIC")."[7] He also stated that the TSLRIC methodology is the same as the TELRIC methodology.

Since terminology is sometimes important in cases such as this, this is a good point to clarify some terms. TSLRIC and TELRIC are measures of the *direct costs* of services and network elements, respectively. They do not include *common costs*, or the costs of business functions, such as formulating corporate

[7] Balke Direct, p. 5/92-93.

policy, developing long range plans, accounting, *etc*., that are shared by all services and network elements. The FCC defines *forward-looking economic costs* as the sum of TELRIC and a reasonable allocation of forward-looking common costs. The McLeod cost study attempts to compute TELRIC or TSLRIC of access service elements, and then adds an allocation of common costs to them. Consequently, the study results represent forward-looking economic costs. I will refer to the cost study results as forward-looking economic costs.

I should note that it is my understanding that the AT&T Companies do not agree that the TSLRIC and TELRIC methodologies are the same, primarily due to differences in the utilization levels reflected in the two methodologies. In any event, McLeodUSA's position is that TSLRIC and TELRIC methods are the same, so I will be evaluating its study and results in terms of the TELRIC methodology.

Q. Are there rules for computing TELRIC and forward-looking economic costs?

A. Yes, the FCC rules for determining TELRIC and forward-looking economic costs are described in 47 C.F.R. 51.505 and 51.511.

Q. Do regulators hold sponsors of TELRIC studies to a burden of proof?

A. Yes, although the sponsors of TELRIC studies are most often ILECs, rather than CLECs, the FCC and State commissions require substantiation of the methods, assumptions and input data in TELRIC studies. FCC Rule 51.505(e) provides:

> An incumbent LEC must prove to the state commission that the rates for each element it offers do not exceed the forward-looking economic cost per unit of providing the element, using a cost study that complies with the methodology set forth in this section and Sec. 51.511.

In the *Report and Order* in Case No. TO-2001-438 involving SWBT rates for unbundled network elements, this Commission stated the following regarding Rule 51.505(e):

> This regulation means that SWBT, as the incumbent LEC, has both the burden of production and the burden of persuasion on the issue of whether its proposed rates comply with the forward-looking TELRIC methodology prescribed by the FCC.[8]

The Commission went on to state,

> To the extent that SWBT has failed to produce adequate documentation to support its rates, the Commission will reject those rates.[9]

The FCC in the *Virginia Arbitration Cost Order* was more specific in terms of the requirements of cost models.

> [A] cost model must include the capability to examine and modify the critical assumptions and engineering principles. Underlying data must be verifiable, network design assumptions must be reasonable, and model outputs must be plausible. All data, formulas, and other aspects of the models must be made available

[8] *Report and Order*, "In the Matter of the Determination of Prices, Terms, and Conditions of Certain Unbundled Network Elements," Case No. TO-2001-438, 08/06/02, p. 161.

[9] *Id.*, p. 161.

> to other parties for their evaluation. In other words, a cost model must be transparent and verifiable.[10]

As a cost expert, it is my opinion that given McLeodUSA has used the TELRIC methodology to determine costs to support increases in access rates, the Company should meet the same standard as others sponsoring TELRIC studies as the basis for rates.

Q. In your opinion, has McLeodUSA met its burden of proof that the results of its cost study properly determine its forward-looking economic costs?

A. No. McLeodUSA provided the AT&T Companies and the Commission Staff with an electronic copy of its NUCA model. It is possible to trace the cost results through the model calculations, to evaluate the methods used and to identify key assumptions and input data. However, there are at least a dozen *key cost drivers* in the model, such as plant costs and collocation expenses, plant utilization levels, plant expense factors, the common cost factor and others, that appear unreasonable and have not been substantiated. McLeodUSA has not met what the Commission described as "the burden of production and the burden of persuasion" that its proposed access rate increase is cost-justified.

REQUIREMENTS OF TELRIC STUDIES

Q. What are the specific requirements for determining TELRIC and forward-looking economic costs?

[10] *Virginia Arbitration Cost Order*, 18 FCC Rcd 17742-43 ¶ 38, 17747 ¶ 48 (2003).

A. FCC Rules 51.505(b) and (c) define forward-looking economic costs. The FCC has described specific requirements related to calculating these costs, which include the following:

- *Plant is to reflect forward-looking technology and costs.* The costs of switching, transmission and cable plant are to reflect currently available equipment, at current vendor prices and company-specific discounts. FCC Rule 51.505(d)(1) specifically prohibits the use of embedded or historical costs. For example, the cost study should reflect today's cost to construct a new switching system, representing the prices the company would currently pay its switch vendor to engineer, furnish and install the new switch. The study should not reflect switch costs that are either outdated or based on the original cost of existing switches.
- *Usage-sensitive switching costs must reflect only the traffic-sensitive portion of switching plant.* Since the switching rate element is intended to recover usage or traffic-sensitive costs, properly identifying switching costs caused by access service usage is important. The company should determine the portion of the costs of purchasing and installing new switching systems caused by the minutes of use, or call attempts, handled by its switches. This requires analyzing the hardware, software and other charges for new switches, identifying fixed charges versus charges affected by the volume of demand (lines, interoffice minutes of use, *etc.*), and categorizing the charges accordingly. Only the portion of the total cost of a new switch attributable to

usage may be included in usage-sensitive switching costs - the portion of switch costs that are associated in this case with access service.

- *Plant capacity is to reflect an efficient network configuration.* FCC Rule 51.505(b)(1) specifies that switching and transport technologies in the cost study should use "the most efficient telecommunications technology currently available and the lowest cost network configuration, given the existing location of the incumbent LEC's wire centers." In addition, the capacities of switching, transmission and cable plant in the study should be sized for efficient forward-looking utilization. Transmission equipment and cables used for interoffice transport, for example, should not be sized so large in the cost study as to produce excessive spare capacity and costs. This would cause transport costs to exceed forward-looking economic costs, which Rule 51.505(e) prohibits. This will become an important issue in the McLeodUSA cost study.
- *Support asset costs and operating expenses are to be forward-looking, efficiently sized and directly attributable to network elements.* Support assets include land, buildings, equipment and other plant used to house and operate switching systems and transport equipment. In a TELRIC study, these assets are to be sized to support today's technologies, rather than representing existing land, buildings and other assets acquired to support operations and plant in the past. At the same time, support asset costs are to reflect current, rather than embedded land, building and other costs. Similarly, operating expenses for repair and maintenance of switching and transport equipment,

engineering, network administration, *etc*. are to reflect today's business processes, productivity and labor costs. To the extent support assets or various workgroups are employed in producing other products, their costs should be attributed to those products. [47 C.F.R. §51.505]

- *Common costs are to be forward-looking and efficiently incurred*. Common costs typically include executive, legal, accounting and other general and administrative costs. These are costs shared among all products and services, and not directly attributable to specific services, such as retail services. FCC rules call for a reasonable allocation of these costs to be added to TELRIC to determine forward-looking economic costs. [47 C.F.R. §51.505].

In meeting its burden of proof, McLeodUSA must show that its TELRIC (or TSLRIC) study satisfies these requirements.

REVIEW OF THE COST STUDY

Q. How have you organized your testimony regarding McLeodUSA's cost study?

A. This portion of my testimony has four parts. First, I will summarize the cost study results and proposed access rates. Second, I give my overall impression of the NUCA model and describe the approach I took in reviewing the model or cost study. The third part, which represents the majority of my testimony, describes the issues found in the cost study and recommends study corrections to address each issue. Fourth, I will describe the corrections made to McLeodUSA's cost

study based on available information and provide corrected study results. These results clearly show that McLeodUSA's original cost study overstates its access service costs and the rates needed to recover its costs.

Study Results and Proposed Access Rates

Q. What are the results of McLeodUSA's cost study and the resulting proposed rates?

A. Table 1 summarizes the TELRIC (*e.g.*, forward-looking economic cost) estimates provided in Mr. Balke's testimony.[11] These are the same cost figures contained in the NUCA model provided to the AT&T Companies, which I reviewed. According to Mr. Balke, McLeodUSA has set its proposed rates equal to its costs.

Table 1 - McLeodUSA's Claimed Intrastate Access Costs and Proposed Rates

Tariff Section	Element	Proposed Rate / NUCA Cost
Section 6.5(A)	Tandem switched termination	$ 0.00169
Section 6.5(B)	Tandem switched facility - per mile	$ 0.00076
Section 6.7(A)	Switching - origination or termination	$ 0.02033
Section 6.7(B)	Tandem functionality	$ 0.01081
Section 6.9(A)	Local termination service - end office termination	$ 0.02017
Section 6.9(B)	Local termination service - tandem termination	$ 0.02262

Table 2 provides additional details by showing the network elements and cost estimates underlying each proposed rate. The costs are from the model results file, Model Beta – Version 2.0, Missouri spreadsheet, cells E35-E57. Note that some network elements are used in providing more than one rate element.

[11] *Id.*, p. 4.

Table 2 - McLeodUSA's Claimed Access Costs and Proposed Rates

"HIGHLY CONFIDENTIAL"

	Costs					
Network Element	Tandem Switched Termination	Tandem Switched Facility - Per Mile	Switching - Origination & Termination	Tandem Functionality	Local Terminatin Service - End Office Termination	Local Termination Service - Tandem Termination
A. Subscriber loop facilities	$ -	$ -	$ -	$ -	$ -	$ -
B. Access node						
i. Aggregation facilities	$ -	$ -	$	$ -	$	$
ii. Transport/termination facilities	$	$ -	$	$	$	$
C. Fiber transport	$ -	$	$	$	$	$
D. Service node optronics						
i. Fiber distribution equipment	$ -	$ -	$ -	$ -	$ -	$ -
ii. Transport equipment	$	$ -	$	$	$	$
iii. DACs/DSX (MUX)	$	$ -	$	$	$	$
E. Trunk-to-trunk switching resources	$ -	$ -	$	$	$	$
F. Inter-carrier trunking/transport	$ -	$ -	$ -	$ -	$ -	$ -
G. SS7 & other signaling resources	$ -	$ -	$	$	$ -	$ -
Total Costs and Proposed Rates	$ 0.00169	$ 0.00076	$ 0.02033	$ 0.01081	$ 0.02017	$ 0.02262

****The numbers within this table are "Highly Confidential" in their entirety.****

Cost Model Background and Review Approach

Q. What cost model did McLeodUSA use to produce its cost study?

A. As I mentioned previously, McLeodUSA used the Network Usage Cost Analysis or NUCA model. The model was developed by QSI Consulting, with whom Mr. Balke is affiliated, and a team of McLeodUSA employees.

Q. Please describe the NUCA model.

A. The model is Excel-based and consists of eight workbooks or modules that are linked to produce the network element costs shown in Table 2 and map these costs to the access rate elements shown in Table 1. The model is intended to compute TSLRIC or TELRIC and forward-looking economic costs (TELRIC, plus an allocation of forward-looking common costs). The model computes costs for several states, including Missouri.

Q. What was your impression of the NUCA model?

A. The model is organized such that cost calculations are traceable from input values to study results. However, many of the key input values, such as plant equipment costs, plant equipment quantities and others, are not determined within the model, but rather in other Excel files or sources. This makes it impossible to verify key factors, such as the resources used in constructing plant equipment costs and their units, quantities, and unit costs. It also is not possible in some important cases to determine resource capacity drivers (lines, usage or others), capacities and utilization levels underlying input values for plant equipment costs. This

information is necessary to substantiate that plant equipment costs, equipment quantities, *etc*. are reasonable. McLeodUSA did not provide model or study documentation containing work papers or supporting information to show how these input values were determined. In addition, I found some computational errors in the model, and I found several instances in which the methods overstate TELRIC by using low current utilization levels of plant and other resources. These are all issues related to the model. In addition, there are a number of specific issues related to input values that I also will describe.

Q. What approach did you use in reviewing the McLeodUSA cost study?

A. The purpose of my review was to determine whether the cost study produces reasonable estimates of the costs it incurs in providing access services. The Company has chosen to use TSLRIC or TELRIC methodology. Given this, I focused on the following questions:

- Has McLeodUSA provided sufficient information to review the cost study methods, key assumptions and input data? In other words, has it met the burden of proof expected of a carrier sponsoring a TELRIC study as the basis for establishing rates?
- Do the cost study methods comply with the requirements for TELRIC and forward-looking economic costs as defined in FCC Rules §§ 51.505 and 51.511?
- Are the key assumptions and input data reasonable for TELRIC and forward-looking economic costs? Are they valid for a carrier such as McLeodUSA?

I selected the main network elements shown in Table 2 (*e.g.*, aggregation facilities, trunk-to-trunk switching resources and others) and analyzed the cost calculations from the study results back to key assumptions or input data used in the NUCA model. As I traced the cost calculations, I asked the questions above, and using this approach, I identified significant issues in the cost study.

In addition, I have made recommendations for correcting the study to resolve these issues. In some cases, the recommendation is to modify input values or to correct specific algorithms. In others, the recommendation is that the Commission find key assumptions and input data unsubstantiated, which requires the Commission to reject the proposed tariff filing as insufficiently supported.

Q. Did you attempt to identify every possible issue in the cost study?

A. No. I focused on the issues that have the most significant effect on McLeodUSA's access service costs and proposed rates. I did not attempt to identify every possible issue that might be raised. For example, one issue has to do with the low utilization level for AnyMedia shelves (lines in service / equipped line capacity), which for many Access Nodes represents **____** percent of total aggregation facilities equipment costs. The other **____** percent consists of costs for software right-to-use fees, cables, racks, shipping, *etc*. These costs are not insignificant. However, by focusing on the costs of AnyMedia shelves, their quantities and utilization, I address one of the major causes of excessive

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aggregation facilities costs. The other major causes relate to collocation "build out" costs, collocation expenses and others.

Q. What "standard" did you use for determining whether McLeodUSA's cost study properly computes TELRIC?

A. I evaluated the study against FCC Rules 51.505 and 51.511 and the findings of this Commission and others in implementing the FCC Rules with which I am familiar. The FCC rules were established in the *Local Competition Order*, which Mr. Balke cites in explaining the NUCA model's use of TSLRIC or TELRIC methodology.

Q. Do you recommend that the Commission reject McLeodUSA's proposed tariff rate increases based on the issues you have identified?

A. Yes, the issues I have identified demonstrate McLeodUSA's failure to show that its cost study results are valid measures of TSLRIC/TELRIC and forward-looking economic costs. Furthermore, the corrections I have made to the cost study show that McLeodUSA's forward-looking access costs are fully recovered by its existing switched access rates and that no rate increase is required.

<u>Aggregation facilities costs likely are not usage-sensitive and not recoverable in the access switching rate.</u>

Q. What are aggregation facilities and their costs?

A. Aggregation facilities costs consist of three parts – (1) the capital costs and operating expenses associated with plant equipment at McLeoUSA's Access

Nodes used to terminate end user access lines and aggregate traffic for transport to and from the Service Nodes, (2) capital costs and operating expenses on initial collocation "build-out" costs, and (3) recurring collocation expenses. Aggregation facilities include AnyMedia Access Systems from Lucent Technologies, racks, cables, cross-connects and other equipment located in ILEC collocation arrangements.

Q. Are aggregation facilities a major cost element in McLeodUSA's cost study?

A. Yes. Aggregation facilities costs account for **___** percent of the proposed switching rate ($0.02033 per minute).

Q. What types of costs are switching rates intended to recover?

A. The switching rate element of access tariffs is intended to recover the usage or traffic-sensitive costs of local switching that are caused by originating or terminating traffic between an end user and customers of access service (*e.g.*, interexchange carriers).

Q. Were aggregation facilities costs considered usage-sensitive in the cost study?

A. Yes. In Mr. Balke's pre-filed direct testimony, he gave the following description of aggregation facilities:

> (B1) Initial call aggregation and multiplexing for delivery to the McLeodUSA transport equipment and ultimately to the Service Node. Represents the traffic-sensitive components of the AnyMedia equipment used by McLeodUSA for this purpose. (p. 13, item B1)

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He indicates that aggregation facilities are the "traffic-sensitive components of the AnyMedia equipment." These should be components whose capacity is determined by usage, such a calls or minutes of use.

Q. Please explain what is meant by the "traffic-sensitive components" of equipment?

A. Components of plant have measures of capacity. For example, an ILEC uses *pairs of wire* in copper cables to provide access lines or "loops" from customer premises to their local switching system. A cable has a finite number of copper pairs, so a *copper pair* is the measure of capacity. Copper cable capacity is "exhausted" when the quantity of usable of pairs is put in service. It does not matter how much calling takes place on the access line or loop, since the number of calls or minutes of calling has no effect on the exhaustion of the copper cable. Consequently, this would be a non-traffic sensitive or non-usage sensitive component of plant.

In another example, switch trunk equipment is used to provide switch connections to interoffice trunks carrying voice traffic among switches. The underlying measure of switch trunk equipment capacity is the maximum number of *interoffice minutes of use* during periods of peak calling, similar to the number of automobiles that can travel on a roadway during the busiest time of day.[12] When

[12] Peak interoffice minutes of use is measured in terms of 100 call seconds (centum call seconds or CCS) during the busy hour (BH), or BH CCS.

the quantity of interoffice minutes of use during peak periods reaches the maximum usable capacity, switch trunk equipment is exhausted, and additional equipment must be placed. Switch trunk equipment is a traffic-sensitive or usage-sensitive component of plant.

As equipment is exhausted, additional equipment must be placed at additional costs. Therefore, the *driver of resource capacity* (copper pairs, interoffice minutes of use or other) causes the costs associated with the component of plant. Costs of copper cables used to provide access lines or loops would be non-usage sensitive, and costs of switch trunk equipment would be usage-sensitive.

Mr. Balke's pre-filed testimony claims that the components of the AnyMedia equipment, and other aggregation facilities, included in switching costs are those that are usage-sensitive. Otherwise, they should not be included in switching costs and are not recoverable in the switching rate, which McLeodUSA intends to more than double from $0.00848 to $0.02033 per minute.

Q. What is the basis for your conclusion that aggregation facilities likely are not usage-sensitive?

A. First, the cost study determines the quantity of AnyMedia shelves based on end user access lines, rather than usage (minutes of use or CCS). As the quantity of lines increases, AnyMedia shelf capacity is exhausted at a rate of **____** lines

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per shelf, and additional shelves are required. Based on the cost study, AnyMedia shelf investment and costs are driven by lines – not usage.

Second, the cost study labels aggregation facilities as "IDLC." This is the acronym customarily used for Integrated Digital Loop Carrier.[13] IDLC systems are used to terminate end user distribution cable pairs and to aggregate them as voice equivalent circuits (DS0s) for transport over fiber cable to end office switches, much the same function as the AnyMedia Access System. Importantly, the costs of IDLC systems are included in end user access line or loop costs, rather than switching. QSI Consulting, who assisted in the preparation of McLeodUSA's cost study, clearly recognizes that IDLC (or DLC) costs are part of loop costs – not switching. Exhibit WCC-6, which is from a 2002 presentation by the firm, states that loop investments include "Central Office DLC Terminal Equipment" and "Remote terminal equipment." Furthermore, SWBT does not include loop costs, including the costs of DLC systems, in switched access cost studies, as evidenced by the following question and answer in the testimony of David J. Barch in Case No. TR-2001-65:[14]

> Q. SWBT's COST COMPONENTS PREVIOUSLY NOTED DO NOT INCLUDE THE LOCAL LOOP. DOES THE LRIC STUDY DIRECTLY IDENTIFY LOOP COST OR INDIRECTLY CONTAIN SOME ALLOCATION OF LOCAL LOOP COSTS?
>
> A. No. SWBT's Switched Access study neither identifies direct (via LRIC) loop cost nor does the study contain an allocation

[13] See NUCA Access Node Module, Per Node Investment, cell G1.

[14] "Direct Testimony of David J. Barch," Southwestern Bell Telephone Company, Case No. TR-2001-65, Missouri Public Service Commission, 07/01/02, pp.12/9–13/4.

> of local loop cost. Since the loop in not directly attributable to switched access service, there is no justification for its inclusion. In providing switched access, SWBT incurs no incremental local loop costs. Similarly, SWBT avoids no local loop costs if it were to cease offering switched access service. Loop costs are directly incremental only to the provision of basic local exchange service as the loop provides access to the network. As such, local loop costs are not a direct incremental cost of switched access service. Including total loop costs, or some portion, in SWBT's Switched Access study violates the LRIC principle of economic cost causation. [footnote not included]

Thus, AT&T Missouri's switched access cost study does not recover loop costs, including DLC costs. As the study makes clear, the switching element of a properly conducted switched access cost study is intended to determine the usage-sensitive costs of end office switches.

Third, the AnyMedia Access System is not an end office switch - standalone, host or remote switch. It is not performing switching functions. Switching functions are provided by McLeodUSA's **_____** switch, the costs of which are recovered by the switching rate element.

The Commission should find that AnyMedia systems are functionally the same as digital loop carrier systems and that their measure of capacity consumption is lines as shown in McLeodUSA's own cost study. Aggregation facilities costs should then be excluded from costs to be recovered by the switching rate.

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Q. If aggregation facilities costs are not recoverable in the switching rate element, what are the implications for McLeodUSA's proposed rate increase?

A. McLeodUSA's existing switching rate is $0.00848 per minute. Assuming aggregation facilities costs are not recoverable in the switching rate, switching costs, after other corrections in the cost study, are **$_____** per minute instead of the $0.02033 per minute in the cost study. This cost is **_____** McLeodUSA's existing switching rate of $0.00848 per minute; therefore, a rate increase to $0.02033 per minute is unnecessary.

<u>Key cost study input values are not substantiated.</u>

Q. Please describe this issue.

A. There are several essential input values for plant costs and quantities that are not documented or substantiated. The values are taken from other Excel spreadsheets or information sources that are not included in the cost model. As a result, it is not possible to verify that the input values comply with TELRIC requirements and are reasonable. In some cases, though, the input values are clearly questionable (*e.g.*, **_____** switch trunk investments and McLeodUSA common costs) based on publicly available benchmarks or analysis of cost details in the McLeodUSA cost study.

McLeodUSA has not met the standard the Commission set for SWBT in TO-2001-438 that the proponent of the rates bears "both the burden of production and

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the burden of persuasion on the issue of whether its proposed rates comply with the forward-looking TELRIC methodology …"

Q. What are the key input values that have not been substantiated?

A. At this time, I have identified nine input values that have a significant effect on the proposed access rates and are not substantiated. The failure to substantiate these key cost study inputs would sufficiently justify the Commission's rejection of the proposed rate increases. The nine input values are as follows:

- *AnyMedia shelf equipped costs.* The cost study has a single input value for the equipped cost of an AnyMedia shelf.[15] The value is taken from another Excel spreadsheet, AnyMedia Pricing 08-25-05, which is not part of the model. McLeodUSA has failed to provide information to verify the resources (hardware components), units, quantities and unit prices included. Mr. Balke indicated that aggregation facilities represent the "traffic-sensitive components of the AnyMedia equipment," and information is not provided to show how the cost study distinguished non-traffic sensitive from traffic-sensitive components, if any.
- *Collocation "build out" costs.* The cost study uses two input values for collocation build out costs – one for collocation arrangement capable of supporting **____** AnyMedia shelves and the other for collocation

[15] AnyMedia shelf costs represent **__** percent of aggregation facilities total plant investment for the typical Access Node with two shelves.

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arrangements for up to **_____** shelves.[16] The AT&T Companies asked McLeodUSA in their second data request for details on these costs including "collocation rate elements, quantities and unit prices."[17] McLeodUSA's response was:

> This information was provided to QSI from MCLEODUSA engineers from a profitability analysis/tool McLeodUSA uses in evaluating new and/or existing collocation sites. No additional breakdown in the manner discussed in the question above was provided or used in developing the study.

Given this, it is not possible to determine the make-up of the ILEC non-recurring charges included in collocation build out costs, whether the costs are based on current collocation rates or whether all non-recurring charges are attributable to or shared by the AnyMedia system and other aggregation facilities.

- *Collocation expenses*. Collocation expenses shown in the cost study are based on April-June, 2005 actual expense amounts taken from an Excel source file outside the NUCA model. It is not possible to determine from the model input values whether these collocation expenses are attributable to or shared by the aggregation facilities.
- *Common costs*. The cost study uses a very high common cost factor (**_____%**) to add common costs to TELRIC values. The factor is based on the ratio of 2003-2004 costs for accounts McLeodUSA treats as "common" to total capital costs and total operating expenses (exclusive of the "common"

[16] Collocation build out costs represent **__** percent of aggregation facilities total plant investment for the typical Access Node with **___** AnyMedia shelves.

[17] AT&T Missouri Data Requests 5 through 15, #13.

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costs).[18] No information is provided to show that the amounts treated as common are indeed "common" to all services, rather than being attributable to individual services or service lines.[19] In addition, no information is provided to demonstrate that using 2003-2004 expense levels is indicative of the Company's forward-looking common costs. In fact, after analyzing the methods and input values used to compute the common cost factor, it is clear McLeodUSA's cost study overstates common costs and must be corrected.

- **_____** *switch trunk quantities*. Switch trunk quantities directly affect switching costs. Trunk quantities are multiplied times capital costs and operating expenses per trunk, and the result is divided by total switched minutes of use. It is essential that the quantity of trunks reflects efficient design to serve total demand. According to McLeodUSA's response to AT&T Missouri's second data request, the trunk quantities used in the study are current in-service quantities.[20] The study does not show that the quantity of trunks is efficiently sized to serve total demand. I will show that current utilization of trunks is very low, resulting in improperly high switching costs per minute.
- **_____** *switch trunk material costs and vendor installation costs.* The description of input values to the cost study for switch trunk costs is

[18] McLeodUSA does not use the FCC Uniform System of Accounts (USOA), so the cost study maps plant and expenses from the Company's accounts to USOA accounts.

[19] FCC Rule 51.505(c)(1) defines forward-looking common costs as "economic costs efficiently incurred in providing a group of elements or services (which may include all elements or services provided by the incumbent LEC) that cannot be attributed directly to individual elements or services."

[20] McLeodUSA response to AT&T Missouri Data Request 9.b.

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vague and incomplete. Information is not provided on the switch components included in trunk costs. It is important to know whether the trunk costs include fixed, getting started costs and to determine whether each component is actually employed in terminating incoming and outgoing trunk traffic. Information is important on the resource drivers for these components, their capacities and utilization, the number of units included and unit prices. The McLeodUSA cost study indicates **_____ _____,** *etc*., and it is not clear how and whether these factors are reflected in trunk costs. Nevertheless, the investments per trunk derived from these input values and others appear to produce high values, which I describe in more detail beginning on page 61 of my testimony.

- **_____** *and DCS port equipped costs*. These two equipment components are part of transport/termination facilities costs in Table 2. As with other key plant costs, the study does not explain the derivation of the input values. In this case, understanding the capacities and utilization levels of the equipment is particularly important, because the equipment appears to be capable of handling much more demand than current lines in service at McLeodUSA's Access Nodes can justify.
- *Leased transport circuit costs*. **_____ _____ _____.** It appears transport circuit costs are based on recent expenditures for leased circuits. No

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information is provided on the rate elements, quantities, capacities and rates underlying these expenditures. As such, it is not possible, to determine the level of utilization of the leased facilities, whether expenditures include both non-recurring and recurring charges or whether least cost, lease arrangements are reflected, given term plans and volume discounts.

- *Fiber cable lengths*. Fiber cable lengths entered in the cost model apparently are the existing cable lengths for McLeodUSA's fiber rings. Key information, such as a network diagram, existing cable sizes and lengths by cable route and fiber utilization, are not provided. The latter item is particularly important, because it is an indicator of cable sharing, which is an issue that I later discuss on pages 43-46.

Q. Are each of these unsubstantiated input values significant in the determination of McLeodUSA's proposed access rates?

A. Absolutely. An overstatement of any one would materially affect the estimates of access service costs used as the basis for the proposed rate increase.

Q. What is your recommendation regarding the unsubstantiated input values?

A. As a result of McLeodUSA's failure to substantiate these key input values, it has not met its burden of demonstrating that they are reasonable and consistent with FCC Rules 51.505 and 51.511. Therefore, the Commission should reject the cost study and proposed access rates.

Plant equipment quantities are oversized, and utilization levels are low.

Q. Please describe this issue as it relates to McLeodUSA's cost study.

A. Network element costs per minute as shown in Table 2 are computed in the McLeodUSA cost study using the following general method:

= (Quantity of Resources X Unit Resource Cost) / Total Minutes of Use

[Equation 1]

Resources include materials, vendor engineering, installation labor, software, shipping and other items used in constructing the network element. FCC Rule 51.511(a) for computing forward-looking economic costs per unit requires the following:

> The forward-looking economic cost per unit of an element equals the forward-looking economic cost of the element, as defined in §51.505, divided by a reasonable projection of the sum of the total number of units of the element that the incumbent LEC is likely to provide to requesting telecommunications carriers and the total number of units of the element that the incumbent LEC is likely to use in offering its own services, during a reasonable measuring period.

The key part of the rule is that per-unit costs are to reflect total demand (in the denominator) projected during a reasonable measuring period. Problems arise in the general method used by McLeodUSA when the quantity of resources is over-sized for current (or projected) demand and the utilization level of the resources is unreasonably low. This results in high per-unit network element costs. The McLeodUSA cost study suffers from this problem.

Q. Are the consultants who assisted in preparing the McLeodUSA cost study familiar with the FCC rule and the potential problems?

A. Yes. I have included in Exhibit WCC-6 (page 2) a copy of another slide from the QSI Consulting presentation that I mentioned earlier. Note their statements that "[a]ctual fills do not represent efficient, forward-looking utilization" and that a study "[m]ust consider the fill over the life of the investment."

Q. Does the McLeodUSA cost study use actual or forward-looking fills?

A. It uses actual fills. McLeodUSA's current utilization levels of AnyMedia shelves and other aggregation facilities, collocation arrangements, switch trunks, transport termination facilities and others are quite low. This causes its claimed access service costs to be very high and gives the erroneous impression that access rate increases are needed.

Q. Are there alternative methods for computing network element costs per minute?

A. Yes. TELRIC models often use a "capacity cost" approach in which the general method is as follows:

= (Quantity of Resources X Unit Resource Cost) / (Resource Capacity X Forward-Looking Utilization)

[Equation 2]

In this case, rather than having to project total demand over a reasonable period, a forward-looking utilization level is determined and used to compute per-unit

costs.[21] Note that in using the capacity cost approach in this case, the forward-looking utilization is the ratio of total demand in service projected over a reasonable period of time divided by the capacity of the resource. The utilization level is not the ratio of total demand at exhaust of the resource's capacity divided by its physical capacity (*i.e.*, fill at exhaust). The forward-looking utilization levels of resources and network elements should be documented input values or developed in the cost study so that they can be verified to reflect efficient network configuration per FCC Rule 51.505. This approach reveals instances of low utilization.

Q. Do you recommend that the capacity cost approach be used in McLeodUSA's cost study?

A. Yes, in some cases. The approach used by McLeodUSA's study will produce valid per-unit costs, if resource quantities are properly sized and utilization levels reflect forward-looking, efficient levels of use. I will describe cases in which the capacity costing approach should be used.

Q. Please describe the instances in the cost study where resource quantities appear to be oversized or utilization levels low.

A. I identified four major cases were resources are oversized or utilization levels are too low. These are as follows:

[21] Per-unit costs may be computed in stages. For example, switching costs per trunk (DS0) might be computed based on forward-looking utilization of trunk equipment (DS0s in service / DS1 trunk port). Then, switching costs per minute of use would be computed based on forward-looking utilization of the trunk (DS0) (BH CCS / trunk DS0).

- *AnyMedia shelf quantities and utilization*
- *Collocation arrangement utilization*
- *Switch trunk utilization*
- *Fiber cable sharing*

Q. Please describe the problems related to AnyMedia shelves?

A. AnyMedia shelf costs are **__** percent of aggregation facilities investment, and aggregation facilities costs are **__** percent of the proposed switching rate; so, the quantity and utilization of these shelves is important and has a substantial impact on the cost calculation. The cost study determined that **___** shelves are needed in **___** Access Nodes in Missouri.[22] This quantity is based on input values for the number of equipped end-user lines per Access Node divided by **____** lines per shelf.

I prepared Exhibit WCC-4 to show the equipped lines and number of shelves (columns B and E) across the central offices in which McLeodUSA has aggregation facilities. The chart also shows lines or DS0s in-service. It shows that utilization levels (DS0s in service / equipped capacity) range from a low of **_** percent to a high of **__** percent. Average utilization is **__** percent - **__** percent of equipped capacity is not in service. This means that aggregation facilities costs per line – and per minute of use – are high compared to those at efficient utilization levels.

[22] See Per Node Investment spreadsheet, Access Node Module of NUCA model.

It also is important to note that in numerous Access Nodes, current lines in service could be served with fewer shelves. For example, assuming 90 percent fill at exhaust, column F shows the capacities required to serve current lines or DS0s in service.[23] Only **___** shelves are required based on the equipped capacity needed to serve these lines in service. This is a **__** percent reduction in shelves and AnyMedia shelf costs. Current utilization levels would range from **___** to **__** percent, with average utilization of **___** percent. Importantly, AnyMedia system costs per minute of use would be **___** percent lower, significantly affecting aggregation facilities costs and the proposed switching rate.

Q. What do you recommend to correct for the over-sizing the AnyMedia shelves and their low utilization?

A. The Commission should recognize that McLeodUSA has inflated aggregation facilities costs by either building too much capacity to serve current demand, or not projecting total demand over a reasonable planning period to justify **___** shelves and achieve efficient utilization. The Company has done exactly what QSI Consulting identified in its presentation as a problem – it has used actual fills that do not represent efficient, forward-looking utilization, and it has failed to consider the fill over a future period of time.

[23] Fill at exhaust refers to the percentage utilization of a resource's capacity at the point its capacity is exhausted and additional capacity is placed. The McLeodUSA cost study, in effect, assumes **_____** fill at exhaust, so a 90 percent fill at exhaust would be more liberal in the sense that it causes shelves to be augmented sooner.

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To correct this problem, the AnyMedia shelf quantity should be changed from **___** to **__**, which results in current utilization of **__** percent, rather than the low utilization of **__** percent. While I would prefer that McLeodUSA also project utilization beyond current levels, **__** percent utilization results in a significant reduction in AnyMedia shelf costs compared to **___** percent utilization.[24]

Q. If **___ shelves were to be used in the cost study, what corrections would be necessary?**

A. If the current in-service quantity of AnyMedia shelves is used, then the quantity of lines and minutes of use should be increased to coincide with the forward-looking utilization expected for this quantity of shelves. The resulting aggregation facilities costs per minute should be similar whether the quantity of shelves is sized for today's lines in service and minutes of use, or whether the current shelf quantity is used with lines in service and minutes of use projected to reflect forward-looking, efficient utilization of this capacity.

Q. What is the problem with collocation arrangement utilization?

A. The cost study includes collocation build out costs for **_____** of collocation arrangements – one for up to **____** AnyMedia shelves and the other with up **____** shelves. Exhibit WCC-4 (column L) shows that for many

[24] Given that AnyMedia shelves are added in relatively small increments of **___** lines, overall shelf utilization over time should be greater than **__** percent as more and more shelves reach near full utilization.

offices the utilization level of collocation arrangements based on the cost study shelf quantities (**___**) is **__** percent, and the average is **___** percent utilization. When the number of AnyMedia shelves is reduced to **__** as recommended, the utilization level falls to only **___** percent. This means that non-recurring charges incurred in establishing the **__** collocation sites are being recovered from relatively low current demand, compared to the demand McLeodUSA may expect in the future. This is not consistent with FCC Rule 51.511 for computing forward-looking economic costs per unit.

Q. Does this issue apply to recurring collocation expenses as well?

A. It probably does. Collocation expenses are not documented in the study. It is likely these expenses are for collocation arrangements capable of handling more than the AnyMedia shelf quantities in the study. It does not appear from the cost study that any adjustment to collocation expenses is made to reflect forward-looking utilization.

Q. What is your recommendation for correcting problems related to collocation costs?

A. The Commission should find that McLeodUSA's cost study does not follow FCC Rule 51.511 in computing collocation build out costs and collocation expenses per shelf based on total demand over a reasonable period. Ultimately, this increases aggregation facilities costs per minute and the proposed rates. To correct the cost study, the capacity cost approach (Equation 2) should be used.

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To compute collocation build out costs, the cost study should first calculate average collocation build costs per shelf reflecting forward-looking utilization. The calculation is as follows:

> Collocation Build Out Costs / Shelf = Collocation Build Cost per Collocation Arrangement / (Shelf Capacity X Forward-Looking Utilization)

Collocation expenses per shelf would be computed in the same way. The total collocation build out costs and collocation expenses for current demand would be computed by multiplying these per-shelf costs times the recommended quantity of AnyMedia shelves (**__**). This approach determines an efficient level of collocation costs associated with current demand for aggregation facilities. Later, when I describe the cost study corrections, I will show how the corrections are made.

Q. Please describe the issue of switch trunk utilization.

A. The McLeodUSA cost study does not substantiate the input values for switch trunk quantities, which is a key factor underlying its proposed switching rate. It is clear, though, that switch trunk utilization is low, causing high costs for the trunk-to-trunk switching network element and inflating proposed rates for four of six access rate elements. (See Table 2.)

Consider the following factors underlying McLeodUSA's cost calculations for trunk-to-trunk switching:

- McLeodUSA currently has **_____** DS1-level switch trunks in service.[25] The cost study computes switch investment and costs based on this quantity. However, the cost study does not indicate whether the quantity of switch trunks is properly sized or efficiently used.
- This quantity of switch trunks (at DS1-level) has the capacity for **_____** voice grade trunks, assuming 90 percent maximum trunk fill and 24 DS0s per DS1.[26]
- In response to AT&T Missouri's second data request (9.d), McLeodUSA indicated it currently has **_____** DS0 trunks in service. This means that DS0 trunk utilization of DS1 capacity is **__** percent (= **_____ / _____**).
- In addition, McLeodUSA indicated that it has an average of **_____** annual minutes of use per DS0 trunk in service. This level of usage equates to **_____** BH CCS per DS0 trunk and traffic utilization of DS0 trunk capacity of only **____** percent.[27]
- These two utilizations levels (**___%** and **__%**) combine to yield overall utilization of the current DS1-level switch trunks (on which switching investment and costs are based) of just **__** percent (= **__% X __%**).

[25] Per the National Switch Inventory spreadsheet, Trunk-to-Trunk Switching Module and McLeodUSA's response to data request 9.b of AT&T Missouri's second set of data requests.

[26] Per Appendix A, FCC *USF Inputs Order*, the "maximum trunk fill" for tandem switching is 90%. *In the Matter of Federal-State Joint Board on Universal Service*, CC Docket No. 96-45 and *Forward-Looking Mechanism for High Cost Support for Non-Rural LECs*, CC Docket No. 97-160, "Tenth Report and Order," 10/21/99.

[27] **_____** Traffic parameters were provided by McLeodUSA in response to AT&T Missouri second data request, 9.e.

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Based on the monthly switched minutes actually used in the cost study (**_____**), the overall utilization is even lower, at **___** percent.[28]

This low level of current utilization leads to unrealistically high costs for trunk-to-trunk switching resources and other network elements.

Q. How can this problem in the cost study be corrected?

A. McLeodUSA has failed to follow FCC Rule 51.511, which requires forward-looking economic costs per minute to reflect projected total demand over a reasonable period. The **_____** minutes used in the cost study is estimated for June, 2006. However, McLeodUSA's switched minutes appear to be growing rapidly. The minutes for the Kansas City Service Node **_____ _____** percent from July, 2003 to June, 2006.[29] It would dramatically overstate the access rates needed by McLeodUSA to recover its forward-looking economic costs, if costs are computed based on current utilization levels, when growth in demand will raise these utilization levels in the future.

To correct this problem the cost study should compute the switched minutes for the quantity of switch trunks in the study reflecting efficient forward-looking

[28] The cost study computes costs per minute for switching and several other network elements based on **_____** monthly minutes of use. This equates to **_____** annual minutes per DS0 trunk, **___+** BH CCS per DS0 trunk and **_____** utilization of maximum DS0 trunk capacity. The reason for the difference in the two measures of switched minutes of use is not clear based on the cost study and McLeodUSA's response to data requests. **_____ _____.**

[29] See NUCA Traffic Module, Trend of Exchange level Data spreadsheet.

utilization levels and use this value in place of the June, 2006 low utilization of only **_____** minutes. The calculations would be as follows:

> Monthly Total Switched Minutes = Forward-Looking DS0 Trunks in Service X Forward-Looking Monthly Minutes/DS0 Trunk
>
> > Forward-Looking DS0 Trunks = (**_____** DS1 Trunks X Forward-Looking DS1 Trunk Utilization) X (24 DS0/DS1 X 90% Maximum Fill X Forward-Looking DS0 Utilization of DS1 Trunks)
> >
> > Forward-Looking Monthly Minutes / DS0 Trunk = 9,000 (from FCC Rule 51.513(c)4)

In correcting McLeodUSA's cost study, I made a number of conservative assumptions. First, I assumed that on a forward-looking basis, the Company will utilize 90 percent of its currently installed DS1 trunks, or **_____** DS1 trunks. I assumed 15.1 DS0s per DS1 in service. This is based on 70% utilization of the 90% maximum fill of 24 DS0s per DS1. The product of **_____** DS1s and 15.1 DS0s per DS1 is forward-looking utilization of **_____** DS0 trunks. This is only **_____** more than current DS0s in service.

I used 9,000 minutes per month per DS0. This value is specified in FCC Rule 51.513(c)(4), which states as follows:

> (4) Shared transmission facilities between tandem switches and end offices. The proxy-based rates for shared transmission facilities between tandem switches and end offices shall be no greater than the weighted per-minute equivalent of DS1 and DS3 interoffice dedicated transmission link rates that reflects the relative number of DS1 and DS3 circuits used in the tandem to end office links … calculated using a loading factor of 9,000 minutes per month per voice-grade circuit, as described in §69.112 of this chapter.

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Using 9,000 minutes per DS0 trunk is equivalent to assuming **___** percent forward-looking utilization based on McLeodUSA's engineering parameters.

The resulting, forward-looking monthly traffic load for switching is **_____ _____** minutes instead of today's low **_____** minutes. In correcting the cost study, I used this more efficient level of utilization, one that justifies the quantity of switch trunks (**_____**) and switching costs in the cost study.

Q. Please describe your conclusion with respect to the last utilization-related problem in the study dealing with fiber cable sharing.

A. McLeodUSA's study fails to reflect the sharing of fiber cable capacity and costs, which likely is occurring or will occur in the future.

Q. What is the basis for this conclusion?

A. The fiber transport network element in Table 2 represents fiber cable in SONET rings connecting McLeodUSA's Service Nodes to **_____** of its Access Nodes. The other **____** Access Nodes are not on the SONET rings and use leased transport circuits for connections to the Service Nodes.[30] The cost study computes fiber transport investment by multiplying McLeodUSA's current fiber cable length times an installed cost per foot of fiber cable. Capital costs and operating expenses are computed for the plant investment, and the result is

[30] Low utilization may be an issue for leased facilities as well. The cost study does not substantiate leased circuit costs or the capacity and utilization level of these circuits.

divided by switched minutes of use to arrive at the fiber transport cost per minute in Table 2. The fiber cable is almost entirely **___** fiber buried cable.

SONET transport systems require four fibers – one to transmit, one to receive and two fibers for backup. The cost study indicates the Company has **____** fiber rings, so even assuming the rings share every cable route, the SONET transport systems would consume only **__** fibers or about **__** percent of the total fibers in the cables. However, the entire cost of the fiber cable is attributed to the SONET transport systems carrying switched traffic and non-switched circuits. None of the cable costs are attributed to whoever might be using the rest of the cable fibers.

Telecommunications carriers often use the fibers in interoffice cables for multiple uses, such as for transport systems, the lease of fibers to other carriers, CATV or video services and, in the case of ILECs, to connect digital loop carriers to serving end offices. The fiber cable is shared by users other than the transport system, and per FCC 51.511 a portion of the costs of the cable is attributable to them.

The McLeodUSA cost study, however, does not indicate whether fibers in its cables are currently being used for purposes other than the SONET transport systems or whether it expects such shared use in the future. But, it does not seem reasonable that the Company would place **___** fiber cable when current

demand requires a **___** fiber cable or smaller, unless there were other users today or a significant likelihood of future users.

Q. Has the Commission previously addressed this issue?

A. The Commission addressed the same issue earlier this year in an arbitration between rural ILECs in Missouri and Wireless Carriers (T-MobileUSA and Cingular Wireless), which I represented as the cost witness. The Commission ordered the rural ILECs to reflect cable sharing.[31]

Q. What is your recommendation on this issue.

A. The Commission should find McLeodUSA's cost study deficient as it fails to take into account any current or reasonably foreseeable uses of its interoffice fiber cable besides the SONET transport systems. Given the sizing of the fiber cables, it would be appropriate to take into account the total demand for the fibers over a reasonable period, including demand from other likely uses of the **___** fiber cables. Such fiber transport costs should be attributed among the users in proportion to their percentage of total fiber-miles in service over a reasonable period of time. The amount attributed to the SONET transport systems should then be divided by total switched minutes to compute fiber transport costs per minute. For purposes of correcting the cost study, I have used the Commission's

[31] Final Arbitration Report, Case No. TO-2006-0147, issued: 03/03/06. On Issue No. 9. "What is the appropriate amount of sharing of Petitioners' interoffice cabling in order to reflect sharing with services other than transport and termination?," the Commission adopted the Arbitrator's Decision: "Because assigning 100% of the cost of interoffice fiber cable to transport is extreme and unreasonable, the Arbitrator will require the Petitioners to determine exactly what portion of interoffice fiber cable is assigned to transport. Until this determination is made and the cost studies re-run accordingly, 50% shall be used."

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decision in TO-2006-0147, "Until this determination is made and the cost studies re-run accordingly, 50% [sharing] shall be used."

Model algorithms are inappropriate or incorrect.

Q. Did you find calculations in the cost study in which the methods or algorithms were inappropriate or incorrect?

A. Yes. They include the following, each of which provides a separate basis for the Commission to find McLeodUSA's cost study insufficient for justifying its proposed access rate increases:

- *Calculation of switched versus non-switch percentages of transport circuits.* The costs of numerous plant components and other costs are attributed to either switched services or non-switched services based on a **_____%** split – switched versus non-switched. These percentages are important because they affect the amount of costs ultimately to be recovered in access rates. The **____** percent figure is intended to be computed by dividing the number of DS0 equivalent switched transport circuits by the total DS0 equivalents for switched and non-switched transport circuits. I found the calculations to be inappropriate.

First, only **___** percent of the transport circuits are specifically identified as switched or non-switched. The remaining **___** percent are identified as "unknown," "carrier" circuits, or "blank." The split of the transport circuits with adequate identification (**___** percent) is used to allocate the other

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__ percent of transport circuits. Many of these latter circuits are **___ _____** suggesting the circuits may be dedicated circuits. It is questionable whether valid results are produced when the characteristics of **__** percent of a population are extrapolated to the other **___** percent of the population, when there is evidence the two subgroups are different.

Second, the method used inexplicably adds the DS0s or lines terminating on the AnyMedia shelves to the switched DS0 transport circuits. This seems to be a double-counting of switched traffic to extent the aggregated traffic generated by lines terminating on the AnyMedia shelves is also transported over switched transport circuits. The study does not explain the method, and the rationale is not clear from the methodology.

McLeodUSA should have used the switched versus non-switched percentage based on the **___** percent of transport circuits with identification. For Missouri, these figures are **_____%**.[32] This method does not include the apparent double counting of DS0s or lines terminating on the AnyMedia shelves. Instead, it represents the proportion of transport bandwidth between the Access Nodes and Service Nodes used by switched versus non-switched circuits. It also is important to note that the switched/non-switched split is based on current utilization. To the extent

[32] See cell E46, Switched Ratio spreadsheet, Service Node Transport Module.

McLeodUSA's data services are growing more rapidly than voice services, which is likely, the switched percentage should be lower on a forward-looking basis, resulting in lower access service costs.

- *Calculation of income taxes and operating expenses for collocation build out costs*. If McLeodUSA accounts for collocation build out costs (non-recurring charges to establish collocation arrangements) as a cost of sales or an operating expense, rather than a capital expenditure, it is not appropriate to apply operating expense factors to these costs. Operating expense factors are intended to be multiplied times plant investment. Moreover, McLeodUSA would incur no maintenance and repair expenses on collocation facilities owned by other parties. With regard to income taxes, it is appropriate for the cost study to "levelize" initial collocation build out costs as recurring costs by computing an annuity from a present amount using the expected life of the collocation arrangements and the weighted average cost of capital, but it would not be appropriate to include income taxes. This issue should be addressed by modifying the income tax and operating expense calculations so they do not apply to these costs.
- *Calculation of power, land and building annual costs*. The algorithms for computing power, land and building annual costs are incorrect.[33] The cost study uses factors designed to compute power, land and building investments as a percentage of switching investment to compute annual costs. When the factors are multiplied times switching investment, they do compute power,

[33] For example, see cells D9-D11 and E9-E11, NT-Monthly Unit Trunk Costs spreadsheet, Trunk-to-Trunk Switching Module.

land and building investments; however, corresponding annual cost factors for the three plant accounts then must be multiplied times the investments to determine annual costs. The cost study does not do the second step. As a result the annual costs of these assets are overstated.

Specific input values are unreasonable or incorrect.

Q. What cost study input values appear unreasonable or incorrect?

A. There are five areas where input values do not appear reasonable compared to publicly available benchmarks. These include the following:

- *Economic lives*
- *Cost of equity*
- *Operating expense factors*
- *Common cost factor*
- *Buried cable installed cost per foot*

Q. Please describe the economic lives used by McLeodUSA.

A. The Company uses its financial reporting lives in the cost study to compute book depreciation expenses. These lives for the primary plant accounts – circuit equipment, digital electronic switching and fiber cable – are quite short, resulting in high depreciation expenses. The circuit equipment and digital electronic switching lives used are **_____**. The fiber cable life is **_____**.

AT&T Missouri asked McLeodUSA for the basis for its life estimates in its second data request (No. 8). Their response was:

> The economic lives used in the cost study equate to the equipment lives used by McLeodUSA for financial reporting purposes. McLeodUSA's book depreciation lives were determined according to Generally Accepted Accounting Principles. No technology replacement studies or depreciation life studies were prepared for McLeodUSA's fixed assets. Because McLeodUSA's operating risk is significantly higher than most incumbent local exchange carriers as reflected in its two bankruptcy reorganizations within the last five years. Consequently, the economic life for its fixed assets is heavily impacted by economic obsolescence as well as technical or physical obsolescence. McLeodUSA's financial reporting lives best capture these considerations.

Q. Did the Missouri Commission decide economic lives in Case No. TO-2001-438?

A. Yes. In that case, the issue was framed as "Should SWBT use the latest FCC-approved asset lives?," and the Commission found the following:

> … the Commission concludes that the depreciation lives and parameters prescribed by the FCC represent a fair and reasonable basis for developing parameters for developing UNE rates. Although the FCC's depreciation lives and parameters may be based on older assumptions, the FCC has continued to use those lives and parameters for its own purposes. …

Q. Have any State commissions recently addressed economic lives?

A. Yes. The California Public Utilities Commission ("CPUC") earlier this year in a decision involving unbundled network element rates for Verizon decided economic lives to be used in Verizon's TELRIC studies.[34] The economic lives adopted by the CPUC were also Verizon's financial reporting lives, but they were significantly longer. For circuit and switching equipment, the CPUC adopted

[34] *Opinion Establishing Unbundled Network Element Rates and Price Floors for Verizon California and Modifying Decision 99-11-050 Regarding Monopoly Building Blocks*, Rulemaking, D.06-03-025, 03/15/06, p. 58-61.

lives of eight and 12 years, respectively. In the discussion supporting its decision, the CPUC noted the following:

> According to Verizon, the asset lives it proposes consider current network modernization strategies, the impact of technology and competition, regulatory commitments, state demographics, and wear and tear. (Verizon/Sovereign, 11/3/03. p. 9.) Verizon asserts that competition spurs technological development, shortens the economic life of existing assets, and makes them obsolete. Further, facilities-based competition diverts traffic from the ILEC's network to competitive local carriers' (CLCs) networks. (*Id*. p. 11.) Verizon compares its proposed asset lives to those forecast by Technology Futures Inc. (TFI), an independent research organization that specializes in technology market forecasts. Verizon indicates that its proposed lives fall within the range of lives proposed by TFI. (*Id*., pp. 20-21.)

It is noteworthy that Verizon's argument parallels that of McLeodUSA, plus indicates the additional risks it faces due to the emergence of facilities-based competitors, such as McLeodUSA. It also is important to note that the proposed lives of the opposing parties were significantly longer than Verizon's financial reporting lives - 11 and 14 years for circuit and switching equipment, respectively. The CPUC rendered a similar decision in D.04-09-063 for SBC and set economic lives for circuit and switching equipment of nine and ten years.

For fiber or non-metallic cable, the CPUC set a 20 year economic life in the two decisions for Verizon and SBC. The economic life proposal from opposing parties in the Verizon case was 25 years.

Q. What is your recommendation for the economic lives to be used in the McLeodUSA cost study?

A. While McLeodUSA may use shorter lives, in part, affected by risks "as reflected in its two bankruptcy reorganizations within the last five years," the issue is what lives may be expected looking forward. The types of circuit equipment (AnyMedia Access Systems), digital electronic switching (**_____ _____**) and cable (**_____**) are the same plant used by ILECs in similar operating environments. Some of McLeodUSA's risks as a CLEC may be different from those of an ILEC, but the ILEC, in turn, is faced with other risks, such as those described by Verizon in the recent California UNE case ("facilities-based competition diverts traffic from the ILEC's network to competitive local carriers' (CLCs) networks").

McLeodUSA has provided no substantive justification for using lives that are **_____** than those recently set for Verizon and SBC in California. I recommend the following lives be used in the cost study:

- Circuit equipment – 8 years
- Digital electronic switching – 9 years (lower value of lives order by the CPUC for Verizon and SBC)
- Fiber cable – 20 years

NP

Q. What cost of equity did McLeodUSA use in its cost study?

A. The cost of equity is **_____*.[35] This value compares with the following benchmarks:

- Missouri Commission Report and Order, TO-2001-438 – 13.0 percent
- CPUC D.06-03-025 (03/15/06) for Verizon – 12.3 percent
- CPUC D.04-09-063 for SBC – 11.78 percent

Again, AT&T Missouri asked in its second data request (No. 10) of McLeodUSA to provide the basis for its **_____** cost of equity assumption. Its response was as follows:

> The capital structure and cost of capital inputs within the Network Usage Cost Assessment ("NUCA") model filed with the Commission were obtained from Jay Bradford of Alvarez & Marsal at the time the model was completed in August 2005. Mr. Bradford was a financial expert assisting McLeodUSA before and during its 2005 financial restructuring. Mr. Bradford opined that the capital structure would be approximately **_____ _____** … while the cost of equity would be approximately **_____.**

McLeodUSA's response also indicated that in another cost of equity analysis one year later, the view of the cost of equity was **_____**, or **_____ _____.** Its response stated:

> McLeodUSA's actual book debt / equity ratio as of June 30, 2006 was **2_____ _____.** McLeodUSA's cost of debt at June 30, 2006 was approximately **_____.** A cost of equity analysis prepared recently by Jefferies & Company, Inc. the banker working on

[35] The cost study also used a debt ratio of **_____.** These input values are not being addressed as issues.

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> McLeodUSA's prospective debt offering, indicates that McLeodUSA's cost of equity as of June 30, 2006 is approximately **_____.** …"

McLeodUSA provided a copy of the analysis by Jefferies & Company, Inc. This analysis indicated that the **_____** cost of equity was based on the Capital Asset Pricing Model (CAPM). The analysis produced two components of the cost of equity – **_____ _____.** According to the analysis, the **_____ _____ _____** of all domestic equities, (defined by Ibbotson [Associates] as having **_____ _____,** **_____the estimate of the cost of equity by Jefferies & Company would fall **_____ _____.**

Q. What do you recommend for the cost of equity to be used in the cost study?

A. A cost of equity of **_____** is not valid based on the Company's latest cost of equity analysis. The issue is whether the result of the current analysis – **_____** – is valid. The **_____** depends significantly on whether the **_____ _____ _____?** The **_____** also significantly depends on the debt ratio assumption in the CAPM analysis. The debt ratio affects the Beta value in the analysis.

I recommend the higher end of the range of benchmarks, 12.3 to 13 percent, or a mid-point of 12.65 percent. **_____ _____.**[36]

Q. What concerns do you have with operating expense factors used in the study?

A. The factors used to compute maintenance, repair, power and plant operations expenses for circuit equipment (account 2232) and digital electronic switching (account 2212) are high compared to reasonable benchmarks. In the case of circuit equipment, the operating expense factor is **___** percent, based on the ratio of 2003-2004 expenses in accounts 6232, 6531 and 6534 to embedded investment (account 6232).[37] The portion of this factor for plant maintenance, repair and rearrangements (account 6232) is **___** percentage points of the **___** percent. The comparable ratio for AT&T SWBT in 2005 was only 1.66 percent.[38]

[36] ** _____ _____ _____ _____ _____**

[37] Since McLeodUSA does not use the FCC's Uniform System of Accounts, the cost study maps the Company's expenses and plant account balances to the USOA accounts.

[38] Per FCC ARMIS 43-02. 1.66% = (($176,368,000 / ($10,468,228,000 + $10,764,029,000) / 2, which the account 6232 expense amount divided by average plant in service for account 2232.

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For digital electronic switching, the operating expense factor is an incredible **____** percent. Of this amount, **____** percentage points is for switch maintenance, repair and rearrangement, and the remainder is for power and plant operations expenses. The comparable ratio of AT&T SWBT in 2005 was 2.99%.[39]

Another set of benchmarks are the values in Appendix A of the FCC *USF Inputs Order*. There values are 1.53 percent for the *alternative circuit equipment factor* and 2.69 percent for the *alternative CO switching factor*.

Q. What might cause McLeodUSA's expense factors to be so high?

A. Without adequate documentation from McLeodUSA, it is difficult to say. Accounts 6212 and 6232 include both recurring plant maintenance and repair expenses, and non-recurring service provisioning expenses. The latter expenses should not be included in the expense factors. They are not attributable to access services, and they normally are recovered by various service connection charges.

The McLeodUSA cost study does not appear to remove any non-recurring service provisioning costs that might be included in circuit equipment and digital electronic switching expenses. Since McLeodUSA does not use the FCC's Uniform System of Accounts, the cost study maps expenses from the Company's account structure to the USOA accounts. No information is provided on the

[39] Per FCC ARMIS 43-02. 2.99% = (($184,817,000 / ($6,212,390,000 +$6,167,591,000) / 2).

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business activities whose costs are mapped to accounts 6212 and 6232, so there is no substantiation that the expenses are for maintaining and repairing circuit equipment and digital electronic switching plant.

Q. What do you recommend for operating expense factors?

A. Absent adequate documentation from McLeodUSA to develop company-specific factors, operating expense factors of 3.04 percent and 4.36 percent should be used for circuit equipment and digital electronic switching, respectively. **_____ _____ _____ _____.**

Q. Please describe issues associated with McLeodUSA's common cost factor?

A. As I mentioned earlier, McLeodUSA's cost study uses a very high **____** percent common cost factor. This means for every dollar of direct costs for access services or any other service offered by the Company, **___** cents of "overhead" costs would be added. Exhibit WCC-5 shows the development of the factor. I have reproduced and summarized the cost data in the table below in order to describe issues in the factor development.

Accounts	Capital Costs And/Or Operating Expenses	Total Amount	% Common	Common Amount	Percent of Total Direct Costs
2111/2121/6					
121	Land & building (non-network)	$	%	#	#VALUE!
2112/6112	Motor vehicles	$	%	#	#VALUE!
2114/6114	Tools and other work equipment	$	%	#	#VALUE!
2122/6122	Furniture and artwork	$	%	#	#VALUE!
2113/6123	Office equipment	$	%	#	#VALUE!
2124/6124	General purpose computers	$	%	#	#VALUE!
2682	Capitalized leasehold improvements	$	%	#	#VALUE!
2690	Intangibles - capitalized GPC & billing software	$	%	#	#VALUE!
6611	Wholesale product management & sales	$	%	#	#VALUE!
6623	Wholesale or common customer services	$	%	#	#VALUE!
6711	Executive	$	%	#	#VALUE!
6712--6728	Other corporate operations	$	%	#	#VALUE!
	Total "common" costs	$	(2)	$	(2) #VALUE!
	Total direct costs	$			

****All numbers within this table are "Highly Confidential" in their entirety.****

First, McLeodUSA's cost study treats too much of the Company's costs for certain network and support assets as "common costs." For example, 100 percent of the costs for non-network land and buildings, furniture and artwork, office equipment and general purpose computers are considered to be common to all services. However, a substantial portion of these assets are normally used by customer services and sales personnel involved in activities for retail services – sales, order processing, billing and collections, handling customer inquiries, *etc*. Yet, none of the costs of these assets are directly assigned to retail services. To correct the cost study, a share of these costs should be removed from common costs.

Second, a substantial portion of the common cost factor (**____** percentage points) are for capital costs associated with McLeodUSA's intangibles investment in capitalized general purpose computer and billing software. These costs, though, are based on the Company's embedded investment in the 2003-2004 timeframe, which averaged **_____** for the two years. FCC Rule 51.505 specifically prohibits consideration of embedded costs in determining forward-looking economic costs. Furthermore, the cost study overstates McLeodUSA's forward-looking investment in intangibles.

Intangibles are amortized over a three year cost recovery period, so the annual amortization associated with **_____** is **_____** dollars per year. AT&T Missouri asked McLeodUSA in its second data what its forward-looking amortization expenses are expected to be, and its response was **_____ _____** per year over the 2006-2008 timeframe. This means that the forward-looking level of intangibles investment is only **_____,** based on an average amortization amount of **_____** per year.[40] The cost study dramatically overstates the costs of intangibles, and this must be corrected.

Third, none of the costs of capitalized software for general purpose computers and billing systems was attributed directly to retail customer services and sales. McLeodUSA provided a listing of its 2005 continuing property record for intangibles showing book investments by software item. Among the items with

[40] **_____.**

the largest investments was software for **_____ _____ _____** The descriptions of other major software items were not specific enough to determine whether they were to support all services or specific services or families of services. It is clear, though, that **____** percent of intangibles costs are not common costs.

Fourth, a substantial portion of the non-network land and building costs shown in Table 3 is associated with McLeodUSA's Technology Park in Cedar Rapids, IA. The entire cost of the Technology Park is treated as a forward-looking common cost. McLeodUSA has not substantiated that the Technology Park is occupied 100 percent by corporate operations functions (executive, finance, legal, *etc*.) and that none of the space is occupied by work groups supporting specific services or service lines. It also has not shown that land and building space is fully occupied, such that costs represent forward-looking efficient space utilization. For example, details for the land investment in 2003 reveal **_____ ____** reflected in the cost study's non-network land and building costs.

Fifth, executive expenses are high and represent **___** percentage points of the common cost factor. Analysis of the details underlying these expenses, which were based on 2003 and 2004 expenses, shows that 2003 expenses included **_____.** In 2004, compensation increased to **_____

_____.** Again, these costs are based on embedded costs, and McLeodUSA has failed to show that forward-looking costs should or will reflect this level of **_____.**

Sixth, the capital costs on common plant reflect McLeodUSA's high cost of equity. These costs should be reduced to reflect the recommended cost of equity.

Q. What common cost factor is recommended for the cost study?

A. I have corrected the common cost factor in the McLeodUSA cost study for the six issues that I identified above. The corrected factor is 24.02 percent, consisting of **____** percent for the network and support asset costs and **_____** percent for corporate operations expenses. I used this value in the corrected cost study in place of McLeodUSA's excessive **_____** percent.

Q. Why does the **_____ switch investment per switch trunk appear to be high?**

A. McLeodUSA provided little, if any, substantive information on the basis for its **_____** switch investment per switch trunk. In particular, there was no information on how much of the total switch investment is attributed to the switch trunk.

To test the validity of the switch trunk investment, I multiplied the current quantity of switch trunks for McLeodUSA's entire network times the switch trunk

investments in the study to compute what the Company would claim to be its current cost to purchase and install switch trunk equipment. The total is **_____ _____.**[41] I then compared this current investment with McLeodUSA's total embedded switching investment, which was **_____** at the end of 2004, the most recent data in the cost study. The current cost to purchase and install switch trunk equipment is **_____** of the original total cost of its existing switches. This does not make sense for two reasons. This implies that almost all the cost of switches is for trunk equipment, which McLeodUSA has not demonstrated. And, even if the entire cost of a switch was attributable to trunking, this also implies there has only been a **_____** in the cost to purchase and install switches since the time that McLeodUSA originally purchased its switches.

Another benchmark for switch trunk investment is the *trunk port, per end* investment in the FCC *USF Inputs Order*, Appendix A. This value of $100 per trunk port (DS0) represents the investment per switch trunk in the 1999 timeframe. Adding ten percent to this figure for installation costs and multiplying by 24 DS0s per DS1 yields a switch trunk investment (in 1999 dollars) of $2,640 each. In general, switch prices have declined approximately twelve percent since 1999 based on the CA Turner Price Index, so a benchmark for switch trunk investment (in current dollars) would be $2,323 per trunk versus **_____** in McLeodUSA's cost study.

[41] **_____ _____.**

Q. Why might McLeodUSA's switch trunk investment be high?

A. One reason is that the switch trunk investment (**$_____**) is based on what the cost study refers to as **_____** prices, rather than **_____** prices. AT&T Missouri asked McLeodUSA in its second data request (No. 7) the meaning of **"initial" and "extension" prices**. It indicated that **_____** prices apply to equipment purchased at the time of **_____,** and that **_____** prices **"_____ _____ _____.** For some types of switch trunks, the **_____ _____.** Most switch trunks will be **_____,** so the **_____** should have been reflected in the cost study and given the most weight.

Q. Did you ask McLeodUSA why switch trunk investments did not reflect an **_____?**

A. Yes, this question was asked in AT&T Missouri's second data request, and McLeodUSA stated that **"_____ _____ _____."** This does not explain why **_____** were not used.

NP

Q. Is QSI Consulting aware of the problem of not reflecting a <u>mix of switch prices that apply initially and as growth**</u> occurs?**

A. Yes, again I have included a slide in Exhibit WCC-6 from QSI Consulting's presentation. The firm recognizes the need to **_____ _____ _____** The McLeodUSA cost study does not do this. I believe this is one reason for the high switch trunk investment.

Q. Are there other reasons for the high switch trunk investment?

A. McLeodUSA did not adequately document the calculations underlying its switch trunk pricing. Factors that might lead to high switch trunk investments might be including costs of switch hardware or software that are not attributable to switch trunks or not properly reflecting applicable discounts. However, McLeodUSA failed to provide details that permit me to adequately review the development of its claimed investment in switch trunk equipment.

Q. What do you recommend with respect to McLeodUSA's switch trunk investment?

A. McLeodUSA has failed to substantiate its switch trunk investment, and beyond this, the value used in the cost study is overstated in comparison to its own embedded investment and the benchmark from the FCC's *USF Inputs Order*, Appendix A. For these reasons, the Commission should reject the Company's

proposed switching rate. To correct the cost study, I have used the benchmark investment of $2,323 per switch trunk.

Q. Does the buried cable installed cost per foot also appear to be high?

A. The cost study is confusing on whether it assumes buried or underground cable for its interoffice fiber cable. The spreadsheets developing cable investment refer to the cable as buried cable. If it is buried cable, the cable investment per foot is very high. On the other hand, an underground cable annual cost factor is applied to the cable investment, suggesting the Company intends for the cable to be underground cable. In this case, the cable investment per foot is not unreasonable for fiber cable, including conduit, in urban areas. I have assumed the Company intends for this to be underground cable in metropolitan areas.

Corrections to the cost study indicate McLeodUSA's costs are below its existing rates.

Q. Have you corrected McLeodUSA's cost study for the problems that you have identified?

A. I have corrected the study where adequate information was available to do so. In those instances in which input values were not substantiated, I have had to rely on the cost study input, with the exception of the **_____** switch trunk investments and common costs. I made corrections to the input values for these cost items. I also corrected the study to reflect proper sizing of AnyMedia shelf quantities, to reflect forward-looking utilization levels, to correct algorithm errors

and to correct input values, as needed. Exhibit WCC-3 summarizes these corrections.

Q. Do you have a summary of the corrected cost study results?

A. Yes, Table 2 with the original cost study results and a new table Table 3 with corrected results are shown on the following page. I should point out that I corrected the costs for all network elements except the DACS/DSX (MUX) and SS7 & other signaling resources. The costs of these network elements are minor, and therefore, I did not correct the original costs, recognizing the effect would be immaterial.

Q. What was the effect of correcting the McLeodUSA cost study?

A. The last two rows of Table 3 show ratios of the corrected costs to original cost study results. The two ratios reflect access service costs with and without aggregation facilities costs, depending on whether these costs are considered to be usage-sensitive and recoverable in switching and local termination rates. The ratios range from **_____** meaning that correcting the cost study reduced McLeodUSA's access service costs from **_____** percent. Since it appears that aggregation facilities costs are not usage sensitive, the costs without aggregation facilities would be the correct basis for evaluating the proposed rates.

Table 2 - McLeodUSA Access Costs and Proposed Rates **"HIGHLY CONFIDENTIAL"**

Original Cost Study

	Costs					
Network Element	Tandem Switched Termination	Tandem Switched Facility - Per Mile	Switching - Origination & Termination	Tandem Functionality	Local Terminatin Service - End Office Termination	Local Termination Service - Tandem Termination
A. Subscriber loop facilities	$ -	$ -	$ -	$ -	$ -	$ -
B. Access node						
i. Aggregation facilities	$ -	$ -	$	$ -	$	$
ii. Transport/termination facilities	$	$	$	$	$	$
C. Fiber transport	$ -	$	$	$	$	$
D. Service node optronics						
i. Fiber distribution equipment	$ -	$ -	$ -	$ -	$ -	$ -
ii. Transport equipment	$	$	$	$	$	$
iii. DACs/DSX (MUX)	$	$ -	$	$	$	$
E. Trunk-to-trunk switching resources	$ -	$ -	$	$	$	$
F. Inter-carrier trunking/transport	$ -	$ -	$ -	$ -	$ -	$ -
G. SS7 & other signaling resources	$ -	$ -	$	$	$ -	$ -
Total Costs and Proposed Rates	$ -	$ -	$	$ -	$ -	$ -

Table 3 - McLeodUSA Corrected Access Costs **"HIGHLY CONFIDENTIAL"**

	Costs					
Network Element	Tandem Switched Termination	Tandem Switched Facility - Per Mile	Switching - Origination & Termination	Tandem Functionality	Local Terminatin Service - End Office Termination	Local Termination Service - Tandem Termination
A. Subscriber loop facilities	$ -	$ -	$ -	$ -	$ -	$ -
B. Access node						
i. Aggregation facilities	$ -	$ -	$	$ -	$	$
ii. Transport/termination facilities	$	$ -	$	$	$	$
C. Fiber transport	$ -	$	$	$	$	$
D. Service node optronics						
i. Fiber distribution equipment	$ -	$ -	$ -	$ -	$ -	$ -
ii. Transport equipment	$	$ -	$	$	$	$
iii. DACs/DSX (MUX)*	$	$ -	$	$	$	$
E. Trunk-to-trunk switching resources	$ -	$ -	$	$	$	$
F. Inter-carrier trunking/transport	$ -	$ -	$ -	$ -	$ -	$ -
G. SS7 & other signaling resources*	$ -	$ -	$	$	$ -	$ -
Total costs						
With aggregation facilities	$ -	$ -	$ -	$	$ -	$ -
Without aggregation facilities	$ -	$ -	$	$	$	$
Ratio of corrected costs to original costs						
With aggregation facilities	$	$	$	$	$	$
Without aggregation facilities	$	$	$	$	$	$

* Costs of network elements D.iii and G are the original cost study results, without correction, due to their small original values.

****All numbers within these two tables are "Highly Confidential" in their entirety.****

Q. How do the corrected costs compare with McLeodUSA's proposed access rates?

A. The following table compares corrected costs with McLeodUSA's existing switching and local transport rates.

Table 4 - Comparison of Corrected Access Costs to Existing Rates

McLeodUSA - P.S.C. MO. No. 3 **"HIGHLY CONFIDENTIAL"**

Rate Element	Corrected Cost	Rate	Percent Margin Over Costs
Local Switching			
w/ aggregation facilities costs	$	$	%
w/o aggregation facilities costs	$	$	%
Local Transport			
0 mile	$	$	%
1 mile	$	$	%
12.5 miles	$	$	%
25 miles	$	$	%
37.5 miles	$	$	%
50 miles	$	$	%
75 miles	$	$	%

****All numbers within this table are "Highly Confidential" in their entirety.****

The table shows that whether aggregation facilities are usage-sensitive or not, the existing local switching rate is sufficient to recover forward-looking economic costs and produce **_____** margins. It also shows that local transport rates in each mileage band **_____** cover costs.

Q. What should the Commission draw from this information?

A. McLeodUSA's proposed increase in intrastate switched access rates is not cost-justified. The Company does not require an increase in access rates in order to recover forward-looking economic costs, when these costs are properly measured according to FCC rules.

NP

Q. Before concluding, have you included the calculations used to correct McLeodUSA's cost study?

A. Yes. Exhibit WCC-7 contains copies of the spreadsheets used to compute the corrected costs shown in Table 3.

Q. Since the increase in the local switching rate may be the most significant of McLeodUSA's proposed access rate changes, would you briefly describe the cost corrections you made relating to this rate?

A. Yes. The two primary network elements associated with the switching rate are aggregation facilities and trunk-to-trunk switching. They account for **__** percent of the costs underlying McLeodUSA's proposed rate, so I will briefly describe these.

Q. Please start with the corrections to aggregation facilities costs.

A. Aggregation facilities costs are computed in the NUCA Access Node module. Corrections for this module are shown on pages 1-3 of Exhibit WCC-7. Each spreadsheet is labeled with row and column headings for reference. There also are two columns of cost calculations – one for the original McLeodUSA cost study and the second for the corrected calculations.

Page one of Exhibit WCC-7 shows the calculations of monthly aggregation facilities costs in the **__** central offices in which McLeodUSA has a presence (row 47). The calculations begin with the number of AnyMedia shelves (row 7),

which I reduced from **___** to **__** to reflect proper sizing for current end user lines in service. These quantities are multiplied times the equipped cost per AnyMedia shelf (row 8) to compute the total AnyMedia shelf investment. The remaining aggregation facilities investment (row 13) is driven by the number of Access Nodes and changed little between the original and corrected studies. Although with further analysis, these costs should be reduced to better reflect forward-looking efficient utilization of the equipment components included in other aggregation facilities.

Next, the calculations add installation costs and sales taxes based on the same factors in the original and corrected studies. Shown on row 25 is the average collocation build out cost per Access Node. The next calculation is important. On rows 26 and 27 a portion of collocation build out costs is assigned to switched services. McLeodUSA's cost study assumed **____** percent of transport circuits are switched, and I corrected this to **_____** percent, resulting in a smaller portion of collocation build out costs being assigned to aggregation facilities.

From rows 32-39, I introduced a correction to compute collocation build out costs based on today's demand on collocation arrangements of **_____** shelves, but recognizing that forward-looking demand may be expected to reach **__* percent of collocation arrangement capacity. The difference between the **$___ _____** in collocation build out costs in the original study (cell B39) and **____

NP

_____** in the corrected study (cell C39) is the cost of inefficient current utilization. There are only **_____** needed to serve existing lines, and collocation arrangements can handle up to **_____.**

Total aggregation facilities investment is accumulated on row 41, and the investment is multiplied times annual cost factors for circuit equipment. I corrected the original study annual cost factor based on the recommended eight year economic life for circuit equipment, a 12.65 percent cost of equity and **_____** percent operating expense factor. In row 45, I corrected the original cost study so that income taxes and operating expenses are not computed on collocation build out costs. Total monthly aggregation facilities costs, before adding recurring collocation expenses and common costs, are shown on row 47.

Page 3 of Exhibit WCC-7 begins with the development of forward-looking, monthly collocation expenses (rows 71-76) using the same capacity costing approach as used for collocation build-out costs. On row 93, I reduced the common cost factor from **____** percent to 24.02 percent. After completing the calculation of per-unit costs, the corrected aggregation facilities costs were **_____** versus **_____** per minute in the original cost study.

The changes that I made corrected for the over-sizing of AnyMedia shelves, low utilization of collocation arrangements, overestimation of switched (versus non-switched) transport circuit consumption of collocation arrangements, errors in the calculations of collocation build out annual costs, errors in the capital cost and

operating expense factors and overstatement of the common cost factor. These corrections resulted in a **___** percent reduction in aggregation facilities costs.

Q. How were the cost corrections made for the other primary switching cost component – trunk-to-trunk switching?

A. Pages 4 and 5 of Exhibit WCC-7 show these corrections. The cost calculations begin with the quantity of **_____** switch trunks currently in service. I lowered the investment per switch trunk from **_____** in the original cost study (**_____** discussed earlier, plus a sales tax adjustment) to $2,323. The corrected figure is based on data from the FCC *USF Inputs Order*, Appendix A expressed in current dollars. Power plant, land and building investments are computed using the same loading factors as the original cost study.

On rows 27-30, I corrected the annual cost factors. The annual cost factors for digital electronic switching and power plant reflect a nine year economic life, rather than **_____,** the 12.65 percent cost of equity and an operating expense factor of **____** percent. I also set the power, land and building annual cost factors to correct the calculation errors in the original study. Recall that the original study treated the power, land and building investment amounts (rows 22-24) as though they were annual costs. As shown on row 39, these corrections lowered the total monthly costs for switch trunks from **$___ _____** or by **___** percent.

Next, I corrected the common cost factor from **_____** percent to 24.02 percent and tallied the total monthly costs on row 48. On page 5 of Exhibit WCC-7 the monthly traffic load for **___** trunks is computed. As I stated earlier, I assumed forward-looking utilization of 90 percent (cell C51), resulting in **___** trunks in service (cell C52). Each trunk is assumed to achieve 63 percent utilization or 15.1 DS0s per DS1, with 9,000 monthly minutes per DS0. Given these assumptions to correct the current inefficient utilization reflected in the cost study, the monthly traffic load on the **___** switch trunks is **_____ ____** minutes. This figure is used to compute the corrected forward-looking cost per minute of **_____** per minute, which is **___** percent less than the original cost study result.

The original cost study estimate of **_____** suffers from over-sizing of switch trunks and underutilization. There are errors in the annual cost calculations for power plant, land and buildings, and adjustments necessary for the capital cost, operating expense and common cost factors. And, the switch trunk investment is suspect. When corrections are made for these errors, the resulting switch trunk cost is quite low.

Q. Are the corrections for the other network elements done in a similar manner?

A. Yes, they are.

NP

Conclusions and Recommendations

Q. Please summarize your findings and overall recommendation to the Commission with respect to McLeodUSA's claimed access service costs and proposed rates?

A. After reviewing McLeodUSA's cost study, I found major assumptions and input values that are not substantiated. McLeodUSA has not met the burden of proof expected of a sponsor of a TELRIC study used as the basis for justifying rates. Based on the Commission's previous position in TO-2001-430, that I cited earlier this fact alone is sufficient to reject the cost study and proposed rates.

It is clear, though, that McLeodUSA's claimed costs exceed their TSLRIC / TELRIC for access services, plus an allocation of common costs. Switching costs include aggregation facilities that are functionally equivalent to digital loop carrier systems and sized based on end user lines, rather than usage. These non-usage sensitive costs should not be recovered in the switching rate. In addition, McLeodUSA's cost study reflects incorrect methods, erroneous calculations, low plant utilization levels, and input data that cause costs to be overstated (economic lives, cost of equity, operating expense factors, common cost factors, *etc*.). When corrections are made for these issues, McLeodUSA's access service costs are well below its existing rates as shown in Table 4 above. The Commission should, therefore, reject McLeodUSA's proposed access rates on the basis that they are not cost-justified.

Q. Does this conclude your direct testimony?

A. Yes, it does.

Exhibit WCC-1

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Independent Consultant **1996 - 2006**

Mr. Conwell provides professional services related to telecommunications cost analysis. These services include the following:

- Supporting wireless carriers in negotiations and arbitrations of reciprocal compensation rates with incumbent local exchange carriers (ILEC). This involves reviewing ILEC cost studies for compliance with FCC rules for reciprocal compensation and giving expert testimony before State regulatory commissions.

- Performing cost studies and financial analyses used by ILECs in the valuation of their telephone plant for tax purposes.

- Performing cost studies for telecommunications services, such as Digital Subscriber Line (DSL), hosted Voice over Internet Protocol (VoIP), Frame and Asynchronous Transfer Mode (ATM) services and others. The studies are used in product planning, pricing and cost management.

- Providing analytical support and advice to wireless carriers on the establishment of State Universal Service Funding mechanisms.

- Providing advice and assistance to telephone companies on the development of cost models for estimating plant investments, capital costs and operating expenses.

In addition, Mr. Conwell has taught courses in telecommunications cost analysis for telephone companies in the U.S. and overseas.

Arthur Andersen & Co. **1989 - 1996**

Mr. Conwell served as a firm-wide expert on telecommunications cost accounting and provided advice to consulting teams working for telephone companies in the US and overseas on cost-related projects. These projects included the following:

- Reviewing Bellcore's Switching Cost Information System (SCIS) for the FCC in its Open Network Architecture proceeding. SCIS was used by the regional Bell Operating Companies (RBOCs) to develop switching element costs.

- Performing a benchmark comparison of US - Canadian toll costs and testifying before the Canadian Radio and Telecommunications Commission (CRTC) on differences between US and Canadian toll costs.

- Developing a "value driver" approach for identifying key performance measures using activity-based costing. The approach was used in consulting projects with telephone companies to improve performance measurement.

- Advising on the design of telephone company cost accounting systems used to measure service costs.

- Developing and teaching for six years a service cost course sponsored by the United States Telephone Association. The course was attended by students from telephone companies, regulatory bodies and other companies in the telephone industry.

Volt Delta Resources **1988 - 1989**

Mr. Conwell worked for the President of Volt Delta Resources and assisted in planning and business development for database services offered to telephone companies. He also participated in the development of a new cost accounting system for a Bell Operating Company.

South Central Bell / AT&T **1974 - 1987**

Mr. Conwell began work with South Central Bell in 1974 in Engineering where he produced cost studies for pricing telephone services. In 1979, he was promoted to district manager and transferred to AT&T where he participated in operations reviews of service costing and ratemaking procedures across the Bell Operating Companies.

In 1981, Mr. Conwell was promoted to division manager as member of the AT&T planning and financial management staff that analyzed business plans for AT&T's Office of the Chairman. Subsequently, he served as a division controller in AT&T Information Systems and division manager in AT&T General Business Systems responsible for marketing and sales channel support.

Education

Bachelor of Industrial Engineering from Auburn University (1972). Masters of Science in Industrial Engineering (Operations Research) from Auburn University (1974).

Exhibit WCC-2 – Summary of Primary Issues in McLeodUSA Access Service Cost Study

Issue	***Effect of Issue***
Aggregation facilities cost may not be usage-sensitive and therefore recoverable in the switching rate. Aggregation facilities are sized based on line quantities, rather than usage. These facilities perform similar functions as Digital Loop Carrier systems, which are part of loop plant. In addition, the McLeodUSA cost study refers to aggregation facilities as "IDLC," the acronym usually used for Integrated Digital Loop Carrier.	Overstates the cost of the Switching-Origination/Termination rate element. (**___** percent of the proposed rate is for aggregation facilities costs.)
Critical cost study input values are not documented and substantiated.	
AnyMedia shelf equipped costs	Resources, resource units, quantities and unit costs underlying the input value(s) cannot be verified in terms of being valid and directly attributable to access service. Capacity drivers, capacities and utilization cannot be evaluated to determine whether input values reflect efficient configuration and projected total demand over a reasonable period.
Collocation "build-out" costs	Same.
Collocation expenses	Same.
Common costs, especially with respect to two of the largest cost items, Intangibles (Capitalized GPC & Billing Software) and General Purpose Computers expense. (See additional issue below relating to methodology.)	Make-up of common costs cannot be evaluated to determine whether any of the costs considered "common" are actually attributable to individual services or families of services, whether common costs based on past experience are reflective of forward-looking, efficient cost levels, and whether any of the costs of network and support assets have been attributed to retail services.
_____ trunk quantities. (See additional issue below relating to low utilization of trunks.)	Validity of trunk quantities cannot be verified in terms of the basis for the quantities – forecast period, demand level, engineering fill at exhaust, current utilization and forward-looking average utilization. Cannot be verified that trunk quantities relate to total switched minutes used to compute costs per minute of use.
_____ trunk material costs and vendor installation costs. (See additional issue below relating to these costs appearing high.)	Resources, resource units, quantities and unit costs underlying the input value(s) cannot be verified in terms of being valid and directly attributable to access service. Capacity drivers, capacities and utilization cannot be evaluated to determine whether input values reflect efficient configuration and projected total demand over a

Issue	*Effect of Issue*
	reasonable period.
_____ and DCS port material costs	Same
Leased transport circuit costs	Same
Fiber cable lengths	Cable lengths used to compute fiber transport investments and costs cannot be verified relative to a network diagram showing cable routes and route lengths.
Plant utilization levels are low.	
AnyMedia shelves. Quantity of AnyMedia shelves is high for current lines in service. Also, utilization levels (lines in service / lines of equipped capacity) are low, ranging from **_____**	Over-sizing AnyMedia shelf quantities overstates aggregation facilities costs. Low utilization levels cause high aggregation facilities costs per line and per minute.
Collocation arrangements (with respect to collocation "build-out" costs and perhaps collocation expenses). The quantities of AnyMedia shelves in the study utilize only **__%** of collocation arrangement capacity in **____** Access Nodes. When AnyMedia shelf quantities are reduced to improve utilization, **_____** Access Nodes would have **_____** percent utilization of collocation arrangement capacity.	Low utilization levels causes high aggregation facilities and transport/termination facilities costs per minute of use.
Switch trunks and other network elements with per-unit costs based on switched minutes of use. Dividing the total switched minutes by switch trunk capacity (DS1 in service X 24 DS0 / DS1) in the cost study results in **_____** minutes per trunk. This translates to **____** busy hour (BH) hundred call-seconds (CCS) per trunk, which would be **_____** of a total of 36 BH CCS or **_____ _____** of 27.5 BH CCS ("maximum trunk occupancy" from Appendix A, FCC *USF Inputs Order*).	Low utilization per switch trunk dramatically increases the costs of switching and other network elements.
_____ and DCS ports. Based on the pre-filed direct testimony of Mr. Balke, the **_____.** And based on labeling in the cost model, the DCS ports may be at **_____.** Given the low number of lines in the Access Nodes, the utilization levels of these equipment components are likely very low. Only **_____** Access Nodes have **_____ _____.** This suggests that the utilization of a **_____** on the DCS would be **_____** and, the utilization level for **_____** common equipment and plug-ins would be even lower.	A high switched percent of transport (vs. non-switched), which allocates much of the capacity and cost of transport/termination facilities to switched services, and low utilization cause high transport/termination facilities costs per minute.

Issue	*Effect of Issue*
Fiber cable. The cost study almost entirely reflects **_____** cable. A SONET transport system required four fibers per system (one to transmit/one to receive and two backup). McLeodUSA apparently has **_____** SONET rings and attributes the entire cost of the interoffice fiber cables to these systems. To the extent the Company today uses cable fibers for other purposes or expects to on a forward-looking basis, a portion of fiber cable costs should be attributed to other uses. Other uses would include the lease of fibers to other carriers, fibers used for video, *etc*.	May overstate fiber transport investment and costs attributable to transport systems and cause higher fiber transport costs per minute.
Some algorithms are incorrect or dubious.	
Calculation of switched vs. non-switched percentage of transport circuits. Quantity of switched DS0s in service is overstated by the methodology. Methodology also produces questionable results based on lack of product descriptions in source data (to discern switched vs. non-switched circuits).	Overstates costs of aggregation facilities, transport/termination facilities and others by shifting too much cost to switched services instead of non-switched services.
Calculation of income taxes and operating expenses on collocation "build-out" costs. If ILEC charges to establish collocation arrangements are expensed by McLeodUSA, rather than capitalized, income taxes should not be imputed on these expenses. Likewise, the operating expense factor, which is applied to plant investment, should not be applied to expenses.	Overstates collocation "build-out" costs expressed on a recurring annual basis, and overstates costs per minute for aggregation facilities and transport/termination facilities.
Calculation of power plant annual costs. The cost model computes power plant investment, instead of annual costs, due to an incorrect algorithm.	Overestimates power annual costs.
Calculation of land and building annual costs. The cost model computes land and building investments, instead of annual costs, due to incorrect algorithms.	Overestimates land and building annual costs.
Some input values are highly questionable compared to publicly available benchmarks.	
Economic lives. The cost study uses McLeodUSA financial reporting lives. For circuit equipment and digital electronic switching, **_____** are used. These are low compared to lives in the FCC *USF Inputs Order* (Appendix A) and recent Verizon and Pacific Bell cases before the California Public Utilities Commission (CPUC). Benchmarks for circuit equipment range from 8.0 to 10.24 years, and benchmarks for digital electronic switching range from 10.0 to 16.17 years. The cost study uses **_____** for aerial and buried fiber cable. Comparable lives from the FCC *USF Inputs Order*, Appendix A are 26.14 and 25.91 years,	Increases depreciation expense for all network elements using circuit equipment, digital electronic switching plant and fiber cable.

Issue	*Effect of Issue*
respectively. In the CPUC decisions above, the non-metallic cable lives ordered for Verizon and Pacific Bell were 20 years.	
Cost of equity. The cost study assumes a **_____.** This is well above benchmarks of 13 percent adopted for SWBT in TO-2001-438, 12.3 percent for Verizon in CPUC D.06-03-025 and 11.78 percent for Pacific Bell in CPUC D.04-09-063.	Increases the cost of money and income taxes on plant for all network elements.
Operating expense factors. The expense factors multiplied times plant investment to compute circuit equipment and digital electronic switching maintenance and repair expenses are high **_____,** respectively. Expense factors of **_____** and **_____** respectively, are recommended, based on 2005 expense levels of the AT&T Companies in the SWBT states and expense factors from the FCC *USF Inputs Order* (Appendix A). The McLeodUSA cost study also does not appear to remove any retail provisioning expenses from the expenses used to compute factors.	Overstates recurring maintenance and repair expenses for all network elements using circuit equipment and digital electronic switching plant.
Common cost factor. The common cost factor includes (in the numerator) capital costs and operating expenses for land, buildings, furniture, general purpose computers, *etc*. (network and support assets). A substantial portion of these assets are utilized by workgroups performing marketing, customer services, installation and other business activities directly attributable to retail services. It is not apparent from the common cost factor development that the costs of network and support assets directly attributable to retail services are removed. In addition, costs associated with Intangibles (Capitalized GPC & Billing Software) attributable to specific services or families of services, if any, do not appear to have been removed.	Overestimates common costs and the amount of common costs allocated to the TELRICs of each network element.
_____ investments per trunk appear high compared to McLeodUSA's embedded investment and compared to the FCC *USF Inputs Order* (Appendix A). **_____ _____ _____ _____.**	May result in overstatement of switching trunk investment and switching costs per minute.
Buried fiber cable investment per foot is derived from two cable projects, rather than based on costs from current vendor quotes for materials, installation, *etc*. The	Causes high fiber transport investment and high fiber transport costs per minute.

Issue	*Effect of Issue*
resulting investment per foot is over twice the investment per foot for the same cable size in the FCC Synthesis Model.	

EXHIBIT WCC-3

NON-PROPRIETARY

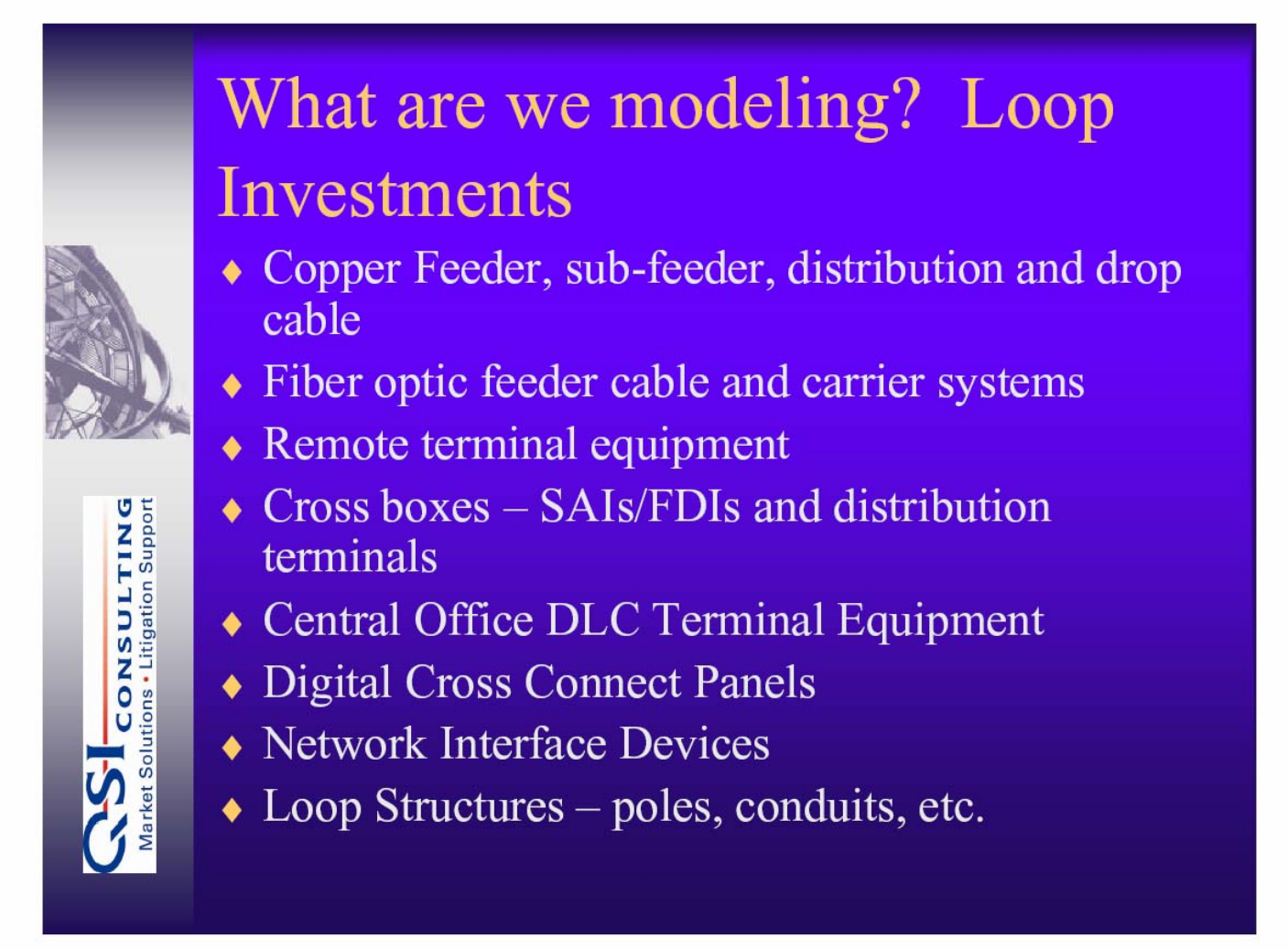
EXHIBIT WCC-4

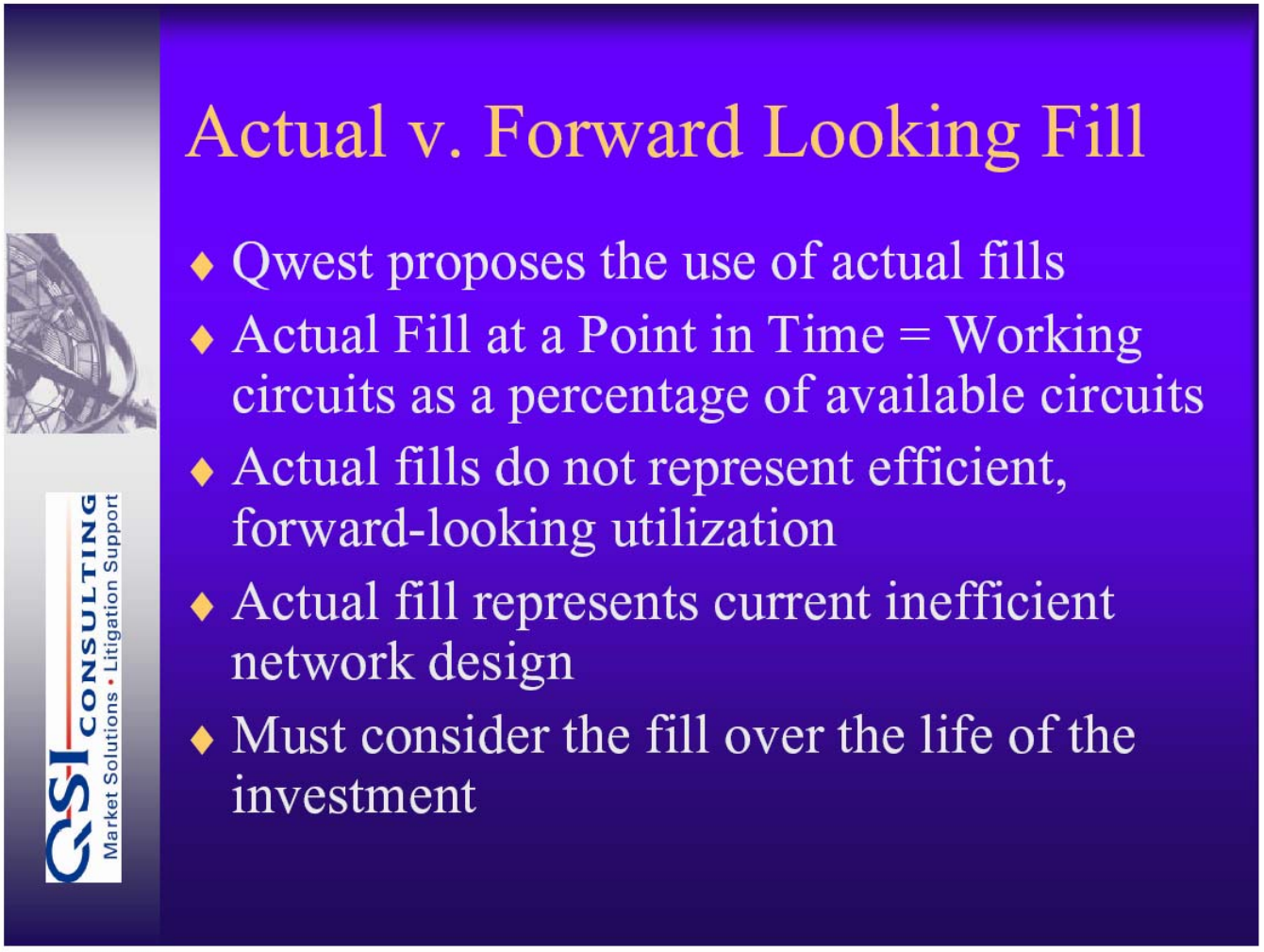
NON-PROPRIETARY

EXHIBIT WCC-5

NON-PROPRIETARY

Exhibit WCC-6 – Slide from QSI Consulting, "Litigating Telecommunications Cost Cases – TELRIC Principles and Other Sources of Enlightenment," 02/05/02. Source: http://www.qsiconsulting.com/qsireports.htm.




Actual v. Forward Looking Fill
Qwest proposes the use of actual fills
Actual Fill at a Point in Time = Working circuits as a percentage of available circuits
Actual fills do not represent efficient, forward-looking utilization
Actual fill represents current inefficient network design
Must consider the fill over the life of the investment
QSI CONSULTING
Market Solutions • Litigation Support

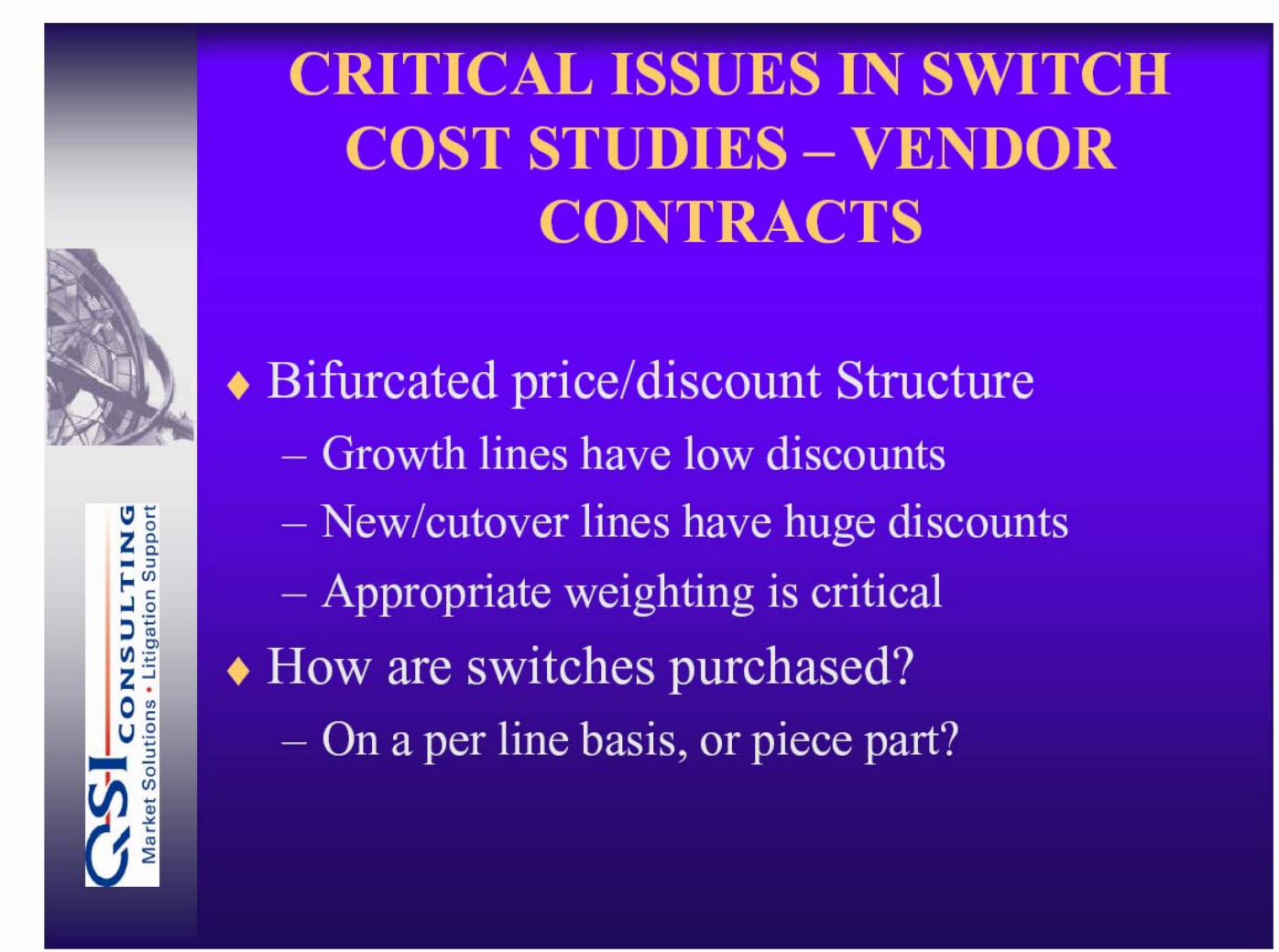

CRITICAL ISSUES IN SWITCH COST STUDIES – VENDOR CONTRACTS
♦ Bifurcated price/discount Structure
– Growth lines have low discounts
– New/cutover lines have huge discounts
– Appropriate weighting is critical
♦ How are switches purchased?
– On a per line basis, or piece part?
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EXHIBIT WCC-7

NON-PROPRIETARY