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BEFORE THE ARIZONA CORPORATION

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IN THE MATTER OF THE REVIEW AND POSSIBLE REVISION OF ARIZONA UNIVERSAL SERVICE FUND RULES, ARTICLE 12 OF THE ARIZONA ADMINSITRATIVE OCDE	DOCKET NO. RT-00000H-97-0137
IN THE MATTER OF THE INVESTIGATION OF THE COST OF TELECOMMUNICATIONS ACCESSREVIEW AND POSSIBLE REVISION OF ARIZONA.	DOCKET NO. RT-00000D-00-0672

REPLY COMMENTS OF

MCLEODUSA TELECOMMUNICATIONS SERVICES, INC.

McLeodUSA Telecommunications Services, Inc. ("McLeodUSA") respectfully submits Reply Comments for Docket No. RT-00000D-0672.

McLeodUSA did not file initial comments in the docket. However, McLeodUSA supports the Initial Comments filed by Integra Telecom on January 4, 2008.

Reply Comments

There appears to be a disconnect between the initial comments filed by certain carriers such as Qwest and what the Commission identified as the subject of the inquiry. Inherent in analyzing the "cost of telecommunication access" is the concept that the cost of providing that access is a relevant consideration. Yet, certain parties ignore this concept in their initial comments and advocate adoption of the interstate regime in Arizona as a de facto reasonable level of intrastate access rates for CLECs. It is indisputable that the FCC's reform of interstate access rates has been devoid of cost considerations, and is, therefore, a model of reform unworthy of serious consideration if, as suggested by the Commission's inquiry, the cost of providing access is a relevant part of the inquiry. McLeodUSA submits the cost of providing access is indeed relevant.

As Integra noted in its initial comments, there are basic, undeniable cost differences between an RBOC and a CLEC in providing switched access services. Some of these cost differences relate to equipment costs, and other cost differences relate to differences in network configurations. Other factors affecting the cost of providing access make RBOC rates inappropriate for CLECs as well. For example, a CLEC looks much more like a rural ILEC when it comes to the cost of providing access in terms of traffic volume. Relative to an RBOC, a CLEC is much more like an RLEC where there are significant costs that must be recovered over a much more limited universe of access minutes.

To that end, attached is a declaration by Dr. August Ankum and Mr. Sydney Morrison filed on behalf of McLeodUSA in FCC Docket No. WC-07-135 explaining, at a high level, the significant cost differences between a CLEC and an RBOC that is directly on point.

The better approach with intrastate access rate reform is to permit carriers to challenge individual carriers access rates that may be outliers rather than forcing all CLECs to justify continuation of current access rate levels. As a carrier that went thru the costly and time consuming process of having a cost study done to support its current access rates, McLeodUSA is perhaps in a unique position to educate the Commission that requiring each CLEC to go through that process would be an extraordinary expense and an administrative burden for the Commission to review each and every cost study.

If the Commission believes that access reform is something worthy of its limited resources, then McLeodUSA believes that CLECs should be given the opportunity to explain in a formal proceeding why they should be entitled to recoup their costs of providing that access, and explain why RBOC interstate rates are an inappropriate and unfair proxy for CLEC access rates.

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RESPECTFULLY SUBMITTED this 6th day of February, 2008.

McLEODUSA Telecommunications Services, Inc.

By _____

William A. Haas
Deputy General Counsel
William H. Courter
Associate General Counsel
6400 C Street SW
Cedar Rapids, Iowa 52406

and

Michael W. Patten
Roshka DeWulf & Patten, PLC
400 East Van Buren Street, Suite 800
Phoenix, Arizona 85004

Original and 15 copies of the foregoing filed this 6th day of February 2008 with:

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Copy of the foregoing hand-delivered/mailed this 6th day of February 2008 to:

Michael M. Grant
Gallagher & Kennedy, P.A.
2575 East Camelback Road
Phoenix, Arizona 85016

Isabelle Salgado
AT&T Nevada
645 E. Plumb Lane, B132
P. O. Box 11010
Reno, Nevada 89520

Nathan Glazier
Regional Manager
ALLTEL Communications, Inc.
4805 E. Thistle Landing Dr
Phoenix, Arizona 85044

Gary Joseph
National Brands, Inc. dba
Sharenet Communications
4633 West Polk Street'
Phoenix, Arizona 85043

Scott Wakefield
Chief Counsel
Residential Utility Consumer Office
1110 West Washington, Ste 220
Phoenix, Arizona 85007

Norman G. Curtright
Qwest Corporation
20 East Thomas Road, 16th Floor
Phoenix, Arizona 85012

Reed Patterson
Qwest Corporation
20 East Thomas Road, 16th Floor
Phoenix, Arizona 85012

Joan S. Burke, Esq
Osborn Maledon PA
2929 North Central Avenue
Phoenix, Arizona 85012

Lyndall Nipps
Vice President, Regulatory
Time Warner Telecom
845 Camino Sur
Palm Springs, California 92262

Rex Knowles
Executive Director- Regulatory
XO Communications, Ste 1000
111 E. Broadway
Salt Lake City, Utah 84111

Jane Rodda, Esq.
Administrative Law Judge
Hearing Division
Arizona Corporation Commission
400 W. Congress
Tucson, Arizona 85701

Maureen A. Scott, Esq.
Legal Division
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

Ernest G. Johnson, Esq.
Director, Utilities Division
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

By Mary Ippolito

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Establishing Just and Reasonable Rates	)	WC Docket No. 07-135
for Local Exchange Carriers	)	

DECLARATION OF AUGUST H. ANKUM AND SIDNEY L. MORRISON IN SUPPORT OF THE COMMENTS OF MCLEODUSA, INC.

Qualifications

1. My name is August H. Ankum. My business address is 1027 Arch, Suite 304, Philadelphia, PA, 19107. I am Senior Vice President and founding partner of QSI Consulting, Inc., an economics and telecommunications consulting firm. I received a Ph.D. in Economics from the University of Texas at Austin in 1992, an M.A. in Economics from the University of Texas at Austin in 1987, and a B.A. in Economics from Quincy College, Illinois, in 1982.

2. My professional background covers work experiences in private industry and at state regulatory agencies. As a consultant, I have worked with large companies, such as AT&T, AT&T Wireless and MCI WorldCom ("MCIW"), as well as with smaller carriers, including a variety of competitive local exchange carriers ("CLECs") and wireless carriers. I have worked on many of the arbitration proceedings between new entrants and incumbent local exchange carriers ("ILECs"). Specifically, I have been involved in a large number of arbitrations between new entrants and AT&T, Verizon, Qwest, AT&T, and Puerto Rico Telephone. Prior to practicing as a consultant, I worked for MCI Telecommunications Corporation ("MCI") as a senior economist. At MCI, I provided expert witness testimony and conducted economic analyses for internal purposes. Before I joined MCI in early 1995, I worked for Teleport Communications Group, Inc. ("TCG"), as a Manager in the Regulatory and External Affairs Division. In this capacity, I testified on behalf of TCG in proceedings concerning local exchange competition issues, such as Ameritech's Customer First proceeding in Illinois. From 1986 until early 1994, I was employed as an economist by the Public Utility Commission of Texas ("PUCT") where I worked on a variety of electric power and telecommunications issues. During my last year at the PUCT, I held the position of chief economist. Prior to joining the PUCT, I taught undergraduate courses in economics as an Assistant Instructor at the University of Texas from 1984 to 1986.

3. Of particular importance to the current issue is my extensive background in and experience with ILEC cost models.

4. My name is Sidney L. Morrison. I am in charge of QSI Consulting, Inc's Engineering and Telecommunications Services group. My business address is 550 Sunset Lakes Blvd., SW, Sunset Beach, North Carolina 28468.

5. I have over 40 years of experience in the telecommunications industry. I began my telecommunications career in 1966 with Southern Bell Telephone and Telegraph, and transferring, in 1970, to Mountain Bell in Denver, Colorado as a central office technician. In 1972, I was promoted to supervise main distributing frame operations. In 1980 and 1981, I performed time and motion studies for service provisioning on approximately 75 of Mountain Bell's MDF operations. These time and motion studies included components for jumper running and administrative activities on each of these frames. From 1983 until 1986, I was the switching control center and main distributing frame subject matter expert for U S WEST. In this position, I was responsible for staff level support for service provisioning and maintenance including the development of enhancements for operational support systems (OSS) supporting these activities. From 1986 until 1993, I was responsible for the U S WEST AMA ("Automatic Message Accounting") teleprocessing organization for the fourteen state U S WEST region.

6. In 1993, I retired from U S WEST and began contract engineering work and consulting. In 1995 I took an assignment in Kuala Lumpur, Malaysia as a contractor/consultant with a team of specialists to build a CLEC network consisting of a Global System for Mobil (GSM) communications services, fixed network services, cable television services and data services integrated into a common transport backbone.

7. I returned from Malaysia in June of 1997 and worked for approximately two years as a contract outside plant/central office equipment (OSP/COE) engineer, and trained new engineers for U S WEST collocation efforts.

8. In May 1999, I accepted a contract in Switzerland building a new CLEC under the market name of diAx telecommunications. My responsibilities involved project management to establish OSS supporting all wireless, wireline, and data services offered by diAx. I also provided consulting services developing business processes supporting the establishment of the diAx Internet Provider Operations Center (IPOC) and diAx data services offerings. I established system requirements based on IPOC business processes for fault management systems, provisioning systems, capacity inventory systems, customer service inventory systems and workflow engines controlling overall maintenance and provisioning processes.

9. In December 2000, I returned from Switzerland and began working for QSI Consulting Inc. as a Senior Consultant. I provide telecommunications companies with engineering advice and counsel for direct network planning, management and cost-of-service support. My specific areas of expertise include network engineering, facility planning, project management, business system applications, incremental cost research and issues related to the provision of unbundled network elements. I have also participated and filed expert witness testimony in a large number of proceedings before state regulatory agencies.

Purpose and Overview

10. The purpose of this Declaration is to address issues raised in the May 1, 2007 declaration of Peter Copeland (the "Copeland declaration") and echoed in the NPRM[1] and briefs filed by the Regional Bell Operating Companies ("RBOCs").

11. An essential claim of the Copeland declaration and the RBOCs' briefs is that incremental revenues associated with an increase in access traffic exceed the incremental costs associated with that traffic. For example, the Copeland declaration states:

> [W]hen Farmers's traffic volumes increased without any concomitant increase in the number of access lines it served, it is almost certain that its costs rise at a much slower rate than did its traffic figures.[2]

12. This same notion is found in the FCC's NPRM:

> When local switching demand increases significantly, a carrier's increased revenues generally will exceed any cost increases. As a result, a carriers' rate of return at some point is likely to exceed the maximum allowed rate of return, making the rates unjust and unreasonable. [3]

Or,

> We tentatively conclude that average per minute switching costs do not increase proportionately to average per minute revenues as access demand increases, and that, as a result, rates that may be just and reasonable given a specific level of access demand may not be just and reasonable at a higher level of access demand.[4]

13. The RBOCs generally support the Copeland declaration and reference it to buttress their own assertions.[5] Further, the RBOCs suggest that *the Copeland declaration and other cost observations apply with equal validity to ILECs and CLECs alike.*[6]

14. Because the CLECs' interstate switched access rates are not, as a practical matter, based on the CLECs' own costs, the RBOCs arguments and Copeland declaration are not only wrong but also irrelevant to the Commission's oversight of CLEC switched access charges.

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1 The FCC requested comment on the merit of the Copeland declaration in paragraph 16 of its NPRM.

2 Copeland declaration at paragraph 2.

3 NPRM at 14. For RBOCs statements echoing this assertion, see, for example: AT&T brief at page 12; Qwest brief at page 14; and, Verizon at page 13.

4 NPRM at 21.

5 For example, even the declaration of Dr. Timothy Tardiff, filed on behalf of Qwest, relies on the Copeland declaration for support.

6 For example, AT&T at page 12: "AT&T's own extensive analysis has confirmed that Mr. Copeland's analysis applies generally to all of the traffic pumping ILECs and CLECs that experience similarly enormous increases in access minutes – it is an indisputable fact that a LEC's costs do not increase materially with the enormous traffic volume increases associated with traffic pumping."

Nonetheless, even if otherwise relevant, we will rebut the Copeland declaration and the RBOCs' briefs and demonstrate that ILECs and CLECs have different networks and cost structures.

15. First and foremost, however, the RBOCs' briefs are deficient in that they flip-flop between various cost methodologies to leap to the conclusion that growth in traffic causes CLECs to over-earn. In virtually one breath, the RBOCs compare switched access rates (which are ultimately based on some form of booked costs) to forward-looking incremental costs (which are based on the ILECs' networks and switch vendor contracts) and then, before completely exhaling, they conclude that this amalgam of considerations proves that CLECs must be over-earning. Completely ignored is the fact that CLECs switched access charges are typically set neither on the CLECs' booked costs nor on its forward-looking costs.

16. Also ignored is the fact, acknowledged by the FCC, that the CLECs are start-up operations[7] and typically have low rates of utilization. That is, even under optimally efficient network designs and planning, most CLECs must purchase and install networks in the anticipation of significant traffic growth. In fact, for most CLECs significant traffic growth is virtually an economic imperative. There is cruel irony, therefore, to the RBOCs' advocacy that significant growth in traffic be discouraged under new Commission rules.

17. CLECs have materially lower rates of utilization than the ILECs', whose access charges they are typically forced to mirror. This means that while it may be true that growth in traffic causes ILECs to over-earn, there is no demonstration that traffic growth in traffic causes CLECs, with lower levels of utilization, to over-earn as well. In fact, most CLECs have access rates that are below costs8 and, thus, their incremental revenues almost certainly do not even cover their incremental costs associated with significant growth in access traffic.

18. We will demonstrate that CLECs and ILECs will incur different levels of incremental costs associated with traffic growth, obviating any generalized conclusions about over-earnings. Specifically, we will discuss the following:

    1. The Copeland declaration claims that line-side and trunk-side switch costs are not usage (traffic) sensitive – this is at odds with previous RBOC testimony.
    2. The Copeland declaration and the RBOCs ignore that incremental switch costs are determined by the specifics of switch vendor contracts, which vary by LEC, switch vendor and switch type.
    3. The Copeland declaration and the RBOCs ignore the well established fact that switch growth and switch augmentations are considerably more expensive than the initial placement of switches. This means that growth in access traffic is likely to cause per-unit-*incremental* costs that may well exceed per-unit-*average* costs – which is the opposite of what the Copeland declaration and the RBOCs assert.

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[7] Even CLECs that have been in existence since the mid-1990s are relative "start-ups" compared to virtually any ILEC.

[8] This is true because CLECs must generally mirror the access charges of their ILEC counter parts, even though, as discussed in more detail below, they have higher costs due to (a) lower levels of network utilization, (b) additional collocation and transport facilities, and (c) higher input prices.

4. The Copeland declaration and the RBOCs ignore that most CLEC switches do not even have a traditional line-side; instead, CLEC switches are typically configured as trunk-port-to-trunk-port and the CLECs' networks' "line-side" is typically found in collocation facilities, placed in spaces leased from ILECs, and connected to the CLEC switch. These facilities have traffic-sensitive costs not typically incurred by ILECs.
5. The Copeland declaration and the RBOCs ignore that network-utilization rates are typically low for CLECs, and significantly below those of ILECs.
6. The Copeland declaration and the RBOCs ignore that CLECs face higher input prices and thus higher incremental costs.

19. In sum, we demonstrate that the Copeland declaration and the RBOCs' briefs fail to demonstrate that CLECs will over-earn as a result of significant growth in traffic.

The RBOCs' Own Testimony Claims that Line-Side and trunk-Side Switch Costs Vary with Usage

20. The Copeland declaration asserts that line-side and trunk-side switch costs do not vary with usage. With respect to the line-side of the switch, the Copeland declaration states:

> ***Line-Side End-Office Switching Costs.*** An end-office switch is equipped with line-side switch ports used to connect individual access lines to the switch. In simple terms, each access line is associated with a single line-side switch port. Line-side costs therefore will rise when a carrier is required to install new line-side switc4 ports. An increase in the number of MOUs transiting the switch will not, however, result in any increase in line-side costs if that increase is not tied to any significant increase in access line usage. This is so because the line-side switch ports that switch manufacturers sell to LECs are engineered with sufficient capacity to support any reasonable increase in usage that may be delivered to those access lines during the life of the switch.[9]
>
> [...]
>
> Thus, line-side end-office switching costs are *not* affected by the *huge increase in MOUs* that are being received by Farmers's switch and handed off to the FSPs.[10] (Emphasis added.)

21. The Copeland declaration makes a similar assertion about the trunk-side of the switch:

> As with line-side switch ports, trunk-side switch ports are sold with all the related traffic capacity components necessary to support *any level* of usage associated with a given trunk. Thus, the increased trunk-side costs associated with increased traffic arise solely as a result of any increase in the number of necessary trunk-side switch ports.[11]

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9 Copeland declaration at paragraph 7.
10 *Id.* at paragraph 7.
11 *Id.* at paragraph 8.

22. These assertions are the underpinnings for the Copeland declarations' conclusions that the incremental revenues associated with an increase in switched access traffic exceed the incremental costs associated with that traffic. These assertions are either misleading or inaccurate.

23. First, it is important to note that the Copeland assertion, that line-side costs do not vary with increases in traffic, is misleading within the context of the issue at hand: *significant* increases in usage. While the Copeland declaration does insert some qualifiers, such as the term "reasonable increase in usage", it subsequently ignores those qualifiers as it proceeds to discuss the incremental costs associated with "*huge increases in MOUs.*" These qualifiers appear also to have been ignored by the RBOCs when they refer in their briefs to the Copeland declaration in order to buttress their claims that significant increases in usage must lead to over-earnings. In fact, any professionally engineered and designed switch or transmission network that experiences significant[12] increases in traffic will require augmentations.

24. The Copeland declaration is also at odds with the RBOCs' own testimony.[13] For example, AT&T witness, Dr. Kent Currie, addressed precisely these issues in a number of state proceedings and testified that variations in per customer line-side usage patterns *do* impact costs. For example, Dr. Currie notes:

> [A]s discussed earlier, usage affects the level of switch investment required, which affects cost over the long run. Changes in customer usage patterns are likely to affect long run pricing and switching costs as well. Ms. Klais' rebuttal testimony indicates that the majority of recent jobs that are needed to augment switching equipment for SBC Michigan have been *driven by usage*. In addition, the underlying cost structure of switching systems has not changed. The average BH CCS of a population of switch customers affects vendor switch design and the vendor's cost of production. Thus, the *high use* and *low use* customers in this population contribute differently to switch design and production *costs*, regardless of how the vendor chooses to price the switch to SBC.[14] (Emphasis added.)

25. It is important to recognize that Dr. Currie is not just talking about the CLASS 5 end-office switch in general but specifically about *the very line-side of the switch discussed in the Copeland declaration*. One explanation Dr. Currie offers for why line-side switch costs are usage sensitive is the level of concentration of the digital loop carrier systems: the more usage (traffic) end-users place on a digital loop carrier system, the lower is the level of

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[12] The Copeland declaration, the RBOCs' briefs and the NPRM all consider increase that cause traffic loads to possibly double or even triple.

[13] We will discuss public testimonies filed by AT&T witnesses before state proceedings. While we have generally filed testimony in opposition to the conclusions of those witnesses regarding the pricing of unbundled local switching, we have not disagreed with their representation of AT&T's switch vendor contracts, as they are discussed in the following excerpts.

[14] Currie, Rebuttal Testimony, at 48.

concentration and the higher are the line-side related costs of serving the end-users. Dr. Currie explains this as follows:

> However, when customers are concentrated on a digital loop, more customers are served than there are talk paths available. *If customer usage increases* to the point that more customers vie for talk paths than there are paths available, blocking occurs, and *equipment capacity is added* to serve the additional demand.[15] (Emphasis added.)

26. To be sure, the additional equipment Dr. Currie refers to is line-side switch equipment.

27. Another AT&T witness, Ms. Linda Klais, explains that because end-user traffic data impacts end-office switch costs (of line-side and other switch components), AT&T's switch vendors require switch usage forecasts:

> SBC Michigan provides the current and forecast usage data needed for each purchase application. Each vendor also has the contractual right to validate such data provided by SBC Michigan in order to justify the requirement for a specific application. The data is provided by SBC Michigan planners and engineers. They analyze current and future demands based on their best judgment and analysis of the data. They determine the average CCS/NAL required to support the demands on the switch.[16]

28. AT&T witness Klais goes on to explain how usage alters the line-side network configuration of, say, the Nortel DMS 100 switch:

> For example, in the design of a Nortel DMS 100 switch, Nortel uses cabling called Speech Links to handle usage demands on the switch fabric. Speech Links are the cables connecting the Line Concentration Module (LCM) to the Line Group Control (LGC) module in the Nortel DMS100 switch. [...] Each additional Speech Link above four (4) *adds cost* to the project that must be absorbed by Nortel, because the DND contract is based on number of lines provided.[17] (Emphasis added.)

29. Having explained the relationship between usage and line-side switch configurations, AT&T witness Klais goes on to discuss AT&T's switch vendor contracts. She explains that higher per line end-user usage requires more expensive line-side (end-user) trunks:

> **Q. DO VENDORS HAVE DIFFERENT PRICING LEVELS FOR DIFFERENT CCS LEVELS?**
> A. Yes. The Lucent contract specifically identifies average CCS/NAL pricing levels and provides different prices for different usage

15 Currie, Rebuttal testimony, at 40, 41.
16 Linda Klais, Rebuttal Testimony, at 11.
17 Linda Klais, Rebuttal Testimony, at 13.

configurations. The contract pricing for all vendors is based upon usage projections that accommodate current and forecast usage. Customer usage increases (past, current and projected) require SBC Michigan to request a switch design that supports a higher usage factor.

Q. DOES SBC MICHIGAN ALWAYS ORDER THE HIGHEST CCS CONFIGURATION POSSIBLE?
A. No.

30. Thus, the AT&T witnesses testified that increased line-side usage causes the purchases of different, more expensive switch configurations or augmentations.[18]

31. Qwest witnesses have filed comparable testimony asserting that variations in line-side usage (traffic) result in significant variations in costs.[19]

32. This type of AT&T testimony – which has been supported by AT&T witness in a large number of proceedings[20] – is directly at odds with the Copeland declaration, which, again, asserts that there are no additional line-side costs associated with significant increases in access traffic.

33. With respect to the Copeland's assertions about the trunk-side of the switch, a number of observations are in order.

34. First, most LECs engineer their switch-trunk-port facilities to pre-specified levels of utilization (which may vary from company to company) and augment the switch (i.e, add trunk ports and move traffic) when traffic increases so as to prevent more blockage than is acceptable. The notion that traffic can be increased significantly on existing trunk port facilities is inconsistent with longstanding engineering practices and, for that matter, common sense.

35. Second, while it may be true that some switch vendors may price and sell – and ILECs may purchase – switch capacity on a per trunk port basis[21] (which is, in fact, what Mr. Copeland is saying), it by no means implies that LECs can increase traffic significantly without trunk augmentations and without incurring additional trunk costs. *In fact, the Copeland declaration inadvertently demonstrates the precise opposite of its conclusions.* To the extent that switches are purchased on a per trunk-port basis – i.e., all other switch facilities, such as the necessary processors capacity, are bundled into the trunk-port price – the switch-trunk

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[18] Like the Copeland declaration the AT&T testimony discuss the costs associated with traditional circuit switches.

[19] See, for example, Direct Testimony of Robert Brigham, on behalf of Qwest Corporation, *In the Matter of the Determination of the Cost of the Unbundled Loop of Qwest Corporation*, PSC of Utah, Docket No. 01-049-85, June 21, 2002.

[20] For example, we have reviewed this type of AT&T testimony in state proceedings in California, Texas, Michigan, Ohio, Indiana, Illinois, and Wisconsin.

[21] This practice was introduced by some vendors, such as Lucent and Nortel, for large ILECs in the nineteen nineties.

costs increase linearly with increases in traffic (which, again, is the precise opposite of what the Copeland declaration seeks to establish.)[22]

Incremental Switch Costs Are Determined by the Specifics of Switch Vendor Contracts, Which Vary by LEC, Switch Vendor and Switch Type

36. As discussed, the Copeland declaration and the RBOCs make generalized statements and conclusions about how little – if at all – costs increase when traffic increases on the ILECs' networks. These types of generalized statements and conclusions are unsupportable and, indeed, inaccurate given that switch contracts vary by LEC, switch vendor and switch type.[23]

37. Given the importance of switching costs, the terms and conditions of switch purchases are typically carefully negotiated between the LECs and vendors and the LECs; ILECs often have teams of negotiators that seek to arrange for contracts that optimally suit the needs of their companies. For example, switching facilities are often purchased and installed to specifically accommodate the usage patterns of the communities they are intended to serve. Most troublesome are sudden and significant changes in usage patterns – such as those that would be caused by significant growth in traffic contemplated in the Copeland declaration and the RBOCs' briefs. Such changes would almost certainly trigger switch augmentations (which, as discussed below, are extra expensive). Without examining the specifics of a company's switch vendor contracts, one simply cannot say in advance what incremental costs a company may incur under their specific switch vendor agreements.

38. Further, switch vendors, such as Lucent and Nortel, deploy different switch architectures that are separate and distinct and that defy generalizations about how costs are incurred on the line-side of the switch 9and in other components). For example, the Nortel DMS100 deploys a completely different set of modules on the line-side to concentrate traffic than the Lucent 5ESS. Examination of company specific switching costs models, such as AT&T's SICAT model, shows that they treat the Nortel DMS100 and the Lucent 5ESS differently.

39. Last, switch vendor contracts are carefully guarded third-party highly confidential documents. As consultants, we have had an opportunity to participate in a large number of state proceedings that provided us with access to these third-party highly confidential contracts. It is not clear that Mr. Copeland in his capacity as a Qwest employee has had an opportunity to review many switch contracts other than Qwest's own, which are by no means representative of contracts for other companies. Most certainly, the Qwest contracts are not representative of those between the switch vendors and CLECs.

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[22] Specifically, in paragraph 9, the Copeland declaration provides an example of a trunk-port investment of $197 per DS0 port and assumes that this port is capable of accommodating 9,000 MOUs per month. Clearly, given its own assumptions, the Copeland declaration demonstrates that as traffic increases, the number of required trunk ports increases commensurately, in the intermediate/long run and over significant volumes, *in linear fashion*. This directly contradicts the Copeland declarations – the RBOCs' briefs – which assert that costs increase less than proportionally when traffic volumes increase.

[23] We have examined switch vendor contracts for the former Ameritech, former SBC, former AT&T, former MCI, former Verizon, and for a large number of CLECs and some small ILECs.

The Copeland Declaration Ignores that Switch Augmentations and Growth Facilities Tend to Be Considerably More Expensive than Initial Switch Placement

40. The Copeland declaration and the RBOCs ignore that under most switch contracts switch augmentations and growth facilities are considerably more expensive than facilities purchased upon switch installation.

41. This well-know attribute of switch contracts was recognized in the Virginia Arbitration Order:

> There is no dispute that large carriers such as Verizon routinely receive substantial discounts off the manufacturer's list price when purchasing switches. In the SCIS model, the amount of this discount represents a significant variable in calculating switch prices. The amount of the discount may vary *considerably* depending on whether the discount is for *new* switches or for *additional equipment* to accommodate additional users.[24]

42. This pricing structure implies that, when access traffic grows, the *incremental costs of switching may well exceed the average costs of switching*, rather than the converse, as asserted by the Copeland declaration, the NPRM and the RBOC briefs. Again, a company specific inquiry is required before one can draw conclusion about anyone specific company's costs.

CLECs Typically Deploy Co-Located Rather Than Traditional Line-Side Switch Facilities

43. The Copeland declaration and the RBOCs' briefs are almost entirely predicated on a traditional ILEC network architecture. Surely, nowhere in the Copeland declaration is there an awareness of the CLEC architecture. While this is not surprising, as the Copeland declaration was presumably drafted for purposes of Qwest's specific complaint proceeding,[25] it does mean that he Copeland declaration should not be used to draw conclusions about the impact of access traffic growth on the CLECs' costs and returns.

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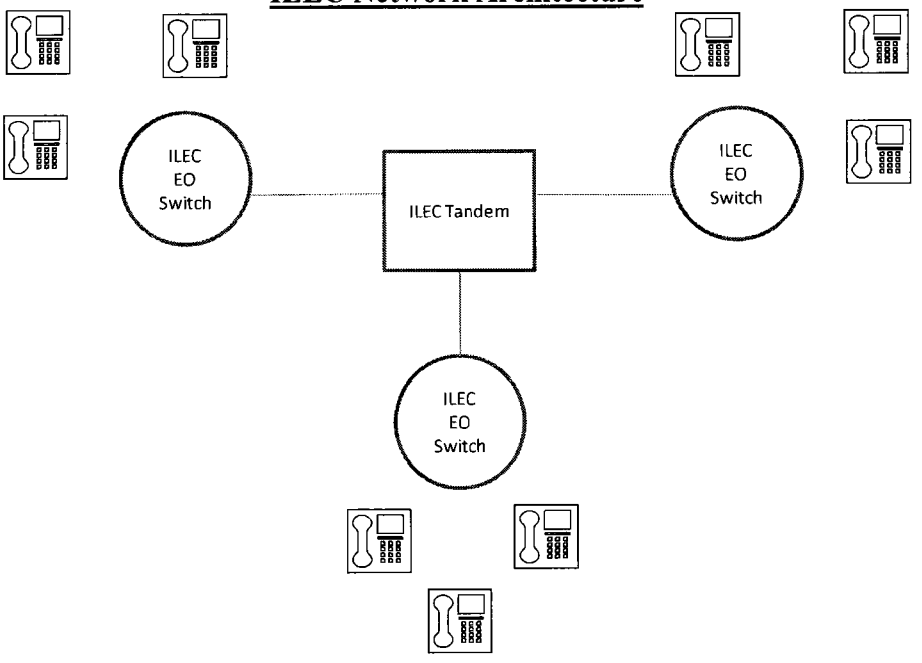
[24] *Memorandum Opinion and Order, CC Docket Nos. 00-218, 00251, In the Matter of Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc., and for Expedited Arbitration, In the Matter of Petition of AT&T Communications of Virginia Inc., Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia Corporation Commission Regarding Interconnection Disputes With Verizon Virginia Inc.*, released August 29, 2003, at 381.

[25] *In the Matter ofQwest Communications Corporation, Complainant, v. Farmers and Merchants Mutual Telephone Company, Defendant.*, in File No. 07-MD-001, at ~~ 6-10, as filed in WC Docket No. 07-135 (Nov. 30,2007).

44. In what follows, we discuss a typical CLEC network architecture and demonstrate how it differs from the traditional ILEC network architectures, discussed in the Copeland declaration (and presumed in the NPRM and the RBOCs' briefs.)

45. CLECs typically enter the market with a distributed network architecture that is significantly different from that of the ILECs. Under this distributed architecture, CLECs tend to substitute *longer transport routes* for *switching nodes* and outside plant facilities while at the same time providing origination/termination services throughout large geographic areas, which may be comparable in size to those served, for example, by ILEC tandems that aggregate the ILEC's traffic from its end office switches (the Class 5 switches). The two diagrams below illustrate and compare the two different architectures. The first is the traditional distributed ILEC architecture that uses both Class 5 and Class 4 offices to serve a specific geographic area. The second represents the CLEC's architecture that uses one switch to serve a comparable geographic area. The CLEC uses one switch for the same area as the ILEC because, while the ILEC serves the majority of the customers, the CLEC can expect to serve only a small fraction of all the customers in the area.

ILEC Network Architecture



46. CLECs generally deploy switches that provide a *combined* Class 5 (end office)[26] and Class 4 (tandem)[27] functionality (rather than switches that provide those functionalities on a stand-alone basis) and by means of a distributed architecture provide call origination and termination services across large geographic areas. By utilizing SONET nodes collocated in

[26] Class 5 (end office) switches typically aggregate the traffic of end user customers over end user loops, which terminate at the switch. They also provide the vertical features, such as call waiting, etc.

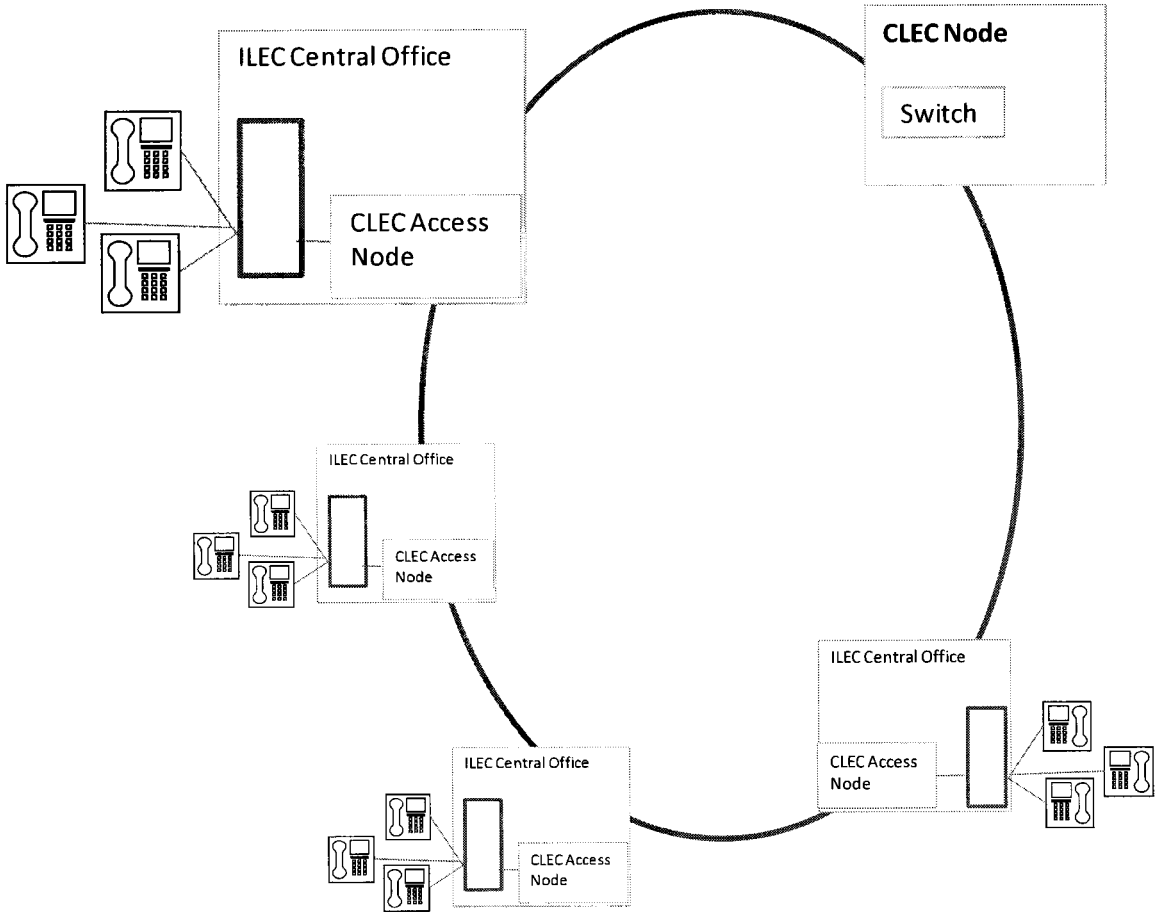
[27] Class 4 (tandem) switches typically are used to aggregate the traffic from end office switches and provide a point in the ILEC network to which the IXCs can connect to for terminating and originating long distance calls.

multiple ILEC central offices, CLECs often are able to serve a customer base that is spread out across an entire state or LATA using a single, integrated end office and tandem switching platform.

47. The cost advantages of this architecture are that it minimizes the amount of switching and central office investment required to serve a *mostly dispersed customer base*, both by minimizing the number of Class 5 local switches required as well as reducing the need for a stand-alone tandem switch. However, the downside is that this network architecture requires additional investments in transport, collocation and SONET nodes. Given that most of the costs of these components are *traffic sensitive* costs, the CLEC network architecture will increase the *traffic sensitive costs* of intercarrier traffic, such as switched access traffic.

48. The following diagram depicts a generic CLEC network architecture and highlights the distributed nature of a typical CLEC network.

CLEC Network Architecture



49. In sum, to properly assess the impact of switched access traffic growth one should, at a minimum, consider the differences between the CLECs' and ILECs' networks and costs.

Clearly, one cannot willy-nilly draw conclusions about the CLECs' costs and earnings based on an analysis of the ILECs' networks and costs.

CLECs Generally Experience Much Lower Levels of Utilization for Switching and Transport Facilities than Assumed in the Switched Access Studies and Rates for ILECs *on Which CLEC Rates Are Based*

50. The level of utilization of facilities is a critical determinant of incremental and average costs of production (output) for virtually all companies in capital intensive industries. In the airline industry, for example, an airline that fills up most of its airplanes has lower average and lower incremental costs than an airline that flies half empty (assuming all else equal). The same principle holds for telecommunications firms: the higher is the level of utilization of a company's network, the lower tends to be the company's incremental and average costs.[28] CLECs, in general, have lower levels of network utilization than their ILECs counterparts.

51. As discussed previously, CLECs typically purchase large switches, such as a Lucent 5ESS, or Nortel DMS500, capable of serving as many as one hundred thousand customers. Likewise, the SONET facilities constructed to transport traffic to end-users and other carriers are often capable of carrying large amounts of traffic. However, most CLECs must deploy these facilities prior to the time at which they are able to acquire sufficient numbers of customers to achieve the levels of utilization for which the facilities are designed. This means that over much of their economic life, the utilization of CLEC facilities is substantially below full capacity, and below the utilization experienced by larger ILECs.

52. By contrast, when an ILEC installs or has installed a new digital switch, it does so to replace an old analog switch that is already serving a large number of customers. In fact, old analog switches, such as the 1AESS, may serve tens of thousands of customers that may very well be comparable to the number of customers that a fully loaded digital switch serves (though obviously the analog switch cannot provide the same functionalities). This means that from the moment a digital switch is installed, the ILEC will be able to achieve a high rate of utilization on certain components of such digital switches.

53. The ILEC is also capable of achieving high utilization rates on existing digital switches in wire centers that are experiencing growth. In such situations, the ILEC will often grow the digital switch by installing additional switch modules in the same central office, or it will place remotes that are served by the existing host switch. In either case, the overall level of switch utilization will be high. The same is true for the ILECs' transport facilities. Here too, ILECs reap the benefit of having a mature network that serves a large, existing customer base so that new facilities can be added incrementally as new demand is anticipated to materialize.

54. The point is that because CLECs have lower rates of utilization than ILECs, the relationship between the incremental costs and the incremental revenues associated with a growth of

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[28] This statement is not necessarily true for all levels of outputs/production on individual facilities in the short run; it is generally true for the total output on a company's telecommunications network viewed over the intermediate to longer run.

access traffic is different for CLECs than it is for ILECs. For example, it very much possible that a specific CLEC -- because of its low rate of utilization – has incremental costs that are significantly higher than the switched access charges it is permitted to assess. This means that, even after traffic growth in traffic, the incremental revenues for this CLEC may still fall short of the incremental costs.

55. As already noted, growth in traffic is often an economic imperative for CLECs that have low levels of utilization. It would be bad public policy to penalize these CLECs for following through on stimulating traffic to levels required for economic viability.

CLECs Will Have More TS Costs than ILECs Because the CLEC Switch Does *Not* Have a Line-Side but Instead Uses TS Transport and Collocation Facilities

56. As discussed, the term "line side" generally refers to the side of the switch on which the end user lines terminate, typically at voice grade (DS0) level capacity. The term "trunk side" refers to the side of the switch on which the trunks (often interoffice trunks) terminate, typically at DS1 level capacity (there are 24 DS0 per DS1.)

57. While the Copeland declaration discussed the effects of costs on the line-side of the switch, it is important to note that *CLECs do not have a typical "line-side" to their switching facilities.* Instead, CLECs tend to use SONET nodes collocated in multiple ILEC central offices in order to serve their customers, customers that may be spread across an entire state or LATA while using only a single, integrated end office and tandem switching platform.

58. That is, for most CLECs, the equivalents of the ILEC's main distribution frame (MDF) and the line-side of the switch are found in the collocation locations where the SONET nodes connect to their end-user lines. Also unlike ILECs, most CLECs have few, if any, line-cards in their Class 5 switches; rather, the connections tend to be trunk-to-trunk connections.

59. This means that, given that a large portion of the non-traffic sensitive (NTS) costs of a switch stems from the line-side of the switch, a larger percentage of the CLEC switching costs will be traffic sensitive (TS). The percentage of TS costs in originating and terminating long distance calls may be further increased due to the fact that the CLEC's networks substitute additional transport facilities, with *usage sensitive* costs, for switching facilities. The costs of the collocation equipment used by CLECs to aggregate their UNE loops and transport the traffic back to their central office "hub" is also largely traffic sensitive. Thus, compared to the ILECs, the CLECs will have a much greater ratio of TS-to-NTS costs.

60. TS costs are critical to the evaluation of the incremental costs and incremental revenues associated with a growth in switched access traffic. This difference between CLECs and ILECs, however, is ignored in the Copeland declaration and the RBOCs' briefs.

CLECs Tend to Have Higher Input Costs than Their ILEC Counterparts

61. Among the most important determinants of costs are the prices companies pay for inputs, i.e., the prices at which facilities are purchased. The higher are the input prices, the higher are the cost of service, facilities, unbundled network elements, etc. In fact, the relationship between the level of input prices and the costs that are to be calculated (for switched access services, UNEs, etc.) is almost linear in the sense that if input prices double, then one should expect the costs (for services, UNEs, etc.) to double.

62. CLECs tend to have higher input costs than ILECs for a number of reasons. As we know from economic theory, large buyers typically are able to extract better prices from suppliers than small buyers; we may refer to this as the Wal-Mart effect. In strict economic terms, the ability to dictate terms to suppliers may be referred to as a form of monopoly power. AT&T and Verizon, as the nation's largest telecommunications firms, are also the nations' largest purchasers of traditional telecommunications equipment. As such they are able to play suppliers off against each other and to extract large discounts by shifting the bulk of their purchases to the supplier that is willing to offer the steepest discounts. Of course, in this process in which suppliers are in effect bidding against one another, all suppliers end up lowering their prices. The Commission is well aware of those discounts and has examined them in various TELRIC proceedings. Again, as was noted during the Virginia Arbitration:

> There is no dispute that large carriers such as Verizon routinely receive *substantial discounts off the* manufacturer's list price when purchasing switches.(Emphasis added.)

63. Having reviewed vendor contracts in many state proceedings we can say, while most of these contracts are third-part highly confidential, that the prices paid by companies tend to vary by the size and buying power of those companies. *And, indeed, there is no dispute: the RBOCs receive huge discounts.*

64. The CLECs are much smaller than most ILECs and purchase many fewer facilities and equipment than do, say, AT&T and Verizon, or than more rural LECs, such as Embarq, or Valor. As a result, CLECs tend to pay higher prices (i.e., receive lower discounts off list prices.) Indeed, there is a disincentive for suppliers to give significant discounts to CLECs as it undermines their list prices without the offsetting benefits of large volume sales.

65. Again, having examined a large number of switch vendor contracts for CLECs, we can testify that CLECs typically purchase facilities straight off vendor list prices either without significant discounts or, most commonly, *without any discounts at all.*

66. In short, because CLECs pay higher input prices than their ILEC counterparts, there is a different relationship between the incremental costs and incremental revenues associated with growth in access traffic. This difference between ILEC and CLEC costs is, once again, ignored in the Copeland declaration and the RBOCs' briefs.

Conclusions

67. In this declaration, we have demonstrated that there are profound differences in the cost structures for CLECs and ILECs.

68. The essence of our declaration can be summed up in a simple analogy: if two parties, A (e.g., a ILEC) and B (e.g., a CLEC), must drive a Ford Taurus for 50,000 miles under identical circumstances (which is comparable to two companies employing the same TELRIC model for switched access), they will have identical per-mile costs. However, if party A receives a discount off the purchasing prices for the car and party B doesn't, then clearly per mile costs are no longer the same. Further, if we now consider that party B, which doesn't receive discounts, also has to drive longer distances (comparable to the fact that CLEC calls much be routed from the CLEC COs to collocation facilities over transport sensitive transport facilities), it is clear that not only are party B's per-mile costs higher than party A's, it's overall costs are higher too. If we had broken down the total mileage into mileage per trip, then party B would have higher incremental costs per trip as well.

69. All of this demonstrates that while the RBOCs may be right that growth in traffic leads certain ILECs to over-earn, the RBOCs arguments are unsupported and not true with respect to the CLECs because the CLECs costs are incurred differently and they tend to be higher with respect to usage sensitive, incremental costs.

70. This concludes this declaration.

We, August H. Ankum and Sidney L. Morrison, declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed: January 15, 2008

August H. Ankum

Sidney L. Morrison