EXHIBIT MTS-T (________)

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of the Continued Costing and Pricing of Unbundled Network Elements, Transport and Termination	))))	Docket No. UT 003013

PART B RESPONSIVE TESTIMONY OF

MICHAEL STARKEY

On behalf of

FOCAL COMMUNICATIONS CORPORATION OF WASHINGTON
XO WASHINGTON, INC., f/k/a NEXTLINK WASHINGTON, INC.

October 23, 2000

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD.

A. My name is Michael Starkey. My business address is QSI Consulting, Inc., 1918 Merlin Drive, Jefferson City, Missouri, 65101.

Q. WHAT IS QSI CONSULTING, INC. AND WHAT IS YOUR POSITION WITH THE FIRM?

A. QSI Consulting, Inc. ("QSI") is a consulting firm specializing in the areas of telecommunications policy, econometric analysis and computer aided modeling. I currently serve as the firm's President.

Q. ON WHOSE BEHALF WAS THIS TESTIMONY PREPARED?

A. This testimony was prepared on behalf of Focal Communications Corporation of Washington ("Focal") and XO Washington, Inc., f/k/a NEXTLINK Washington, Inc. ("XO").

Q. PLEASE DESCRIBE YOUR EXPERIENCE WITH TELECOMMUNICATIONS POLICY ISSUES AND YOUR RELEVANT WORK HISTORY.

A. Prior to founding QSI I was a founding partner and Senior Vice President of Telecommunications Services at Competitive Strategies Group, Ltd. ("CSG") in Chicago, Illinois. Like QSI, CSG is a consulting firm providing a wide array of telecommunications services to international telecommunications carriers, consumer advocates and policy makers. In my position with both CSG and QSI I have represented multiple clients in regulatory proceedings across the country involving telecommunications issues ranging from Interconnection Agreement disputes to generic proceedings aimed at evaluating and applying the FCC's Total Element Long Run Incremental Cost methodology (TELRIC).

Prior to founding CSG, I was most recently employed by the Maryland Public Service Commission as Director of the Commission's Telecommunications Division. Prior to my tenure with the Maryland Commission Staff I was employed by the Illinois Commerce Commission as a Senior Policy Analyst within the Commission's Office of Policy and Planning. I began my career with the Staff of the Missouri Public Service Commission as an Economist in the Commission's Utility Services Division.

A more complete description of my relevant experience can be found in Schedule MTS-1 to this testimony (Exhibit ____).

Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

(HEREAFTER "THE COMMISSION")?

A. No, I have not. I have, however, provided testimony before the FCC and state utility commissions in the following states: Alabama, California, Colorado, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Mississippi, Missouri, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Wisconsin and Wyoming.

Q. DO YOU HAVE DIRECT EXPERIENCE WITH THE RELEVANT ISSUES IN THIS PROCEEDING?

A. Yes, I do. Over the past three years I have represented clients in approximately 25 separate interconnection agreement negotiations, complaints, arbitrations and generic proceedings wherein reciprocal compensation and its applicability to telecommunications traffic that is transmitted to an Internet Service Provider (ISP) was at issue. I have addressed both the public policy ramifications of Internet traffic and its impact on proper inter-carrier compensation issues, and. I have addressed issues specific to costs for carrying ISP-bound traffic in comparison to costs resulting from more traditional voice-grade calling. I have provided testimony regarding this particular issue before state utility commissions in 20 separate states and, in the past month, I served as an instructor for the Michigan State University, Institute of Public Utilities, Advanced Regulatory Studies Program on the issue of: *Telecommunications Costing and Pricing,* *Interconnection and Intercarrier Compensation.*

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to respond to issues raised by the Qwest Corporation ("Qwest") and Verizon Northwest, Inc. ("Verizon") regarding differences they believe exist in the costs incurred to carry traffic bound for an ISP compared to more traditional voice grade traffic. In addition, my testimony will address issues regarding "symmetrical" compensation and the extent to which competitive local exchange carriers ("CLECs") should be allowed to assess rates consistent with tandem termination.

Q. BOTH QWEST AND VERIZON RAISE A NUMBER OF POLICY ISSUES SPECIFIC TO ISP BOUND TRAFFIC AND THE EXTENT TO WHICH THE COMMISSION SHOULD ADOPT A WHOLLY SEPARATE COMPENSATION MECHANISM (I.E., BILL AND KEEP) FOR THIS TYPE OF TRAFFIC. DOES YOUR TESTIMONY ADDRESS THIS ISSUE?

A. No, not directly. It is my understanding that the Commission has already decided that reciprocal compensation payments should be made for all local traffic including traffic bound for an ISP. I am also informed that this case is a "cost case" dealing primarily with the costs ILECs incur in providing unbundled network elements and interconnection. Hence, I have not, within this testimony, responded directly to the lengthy policy arguments raised by Messrs. Brotherson and Trimble and Dr. Taylor. For the Commission's information, however, I have attached as Schedule MTS-2, a copy of Rebuttal Testimony I previously submitted before the Colorado Public Utilities Commission. That testimony addresses many of the same arguments Qwest and Verizon are making in this case. If the Commission wishes to further explore any of the policy issues raised by the ILECs, my hope is that my previously filed rebuttal testimony will assist them in understanding that alternative viewpoints exist.

Q. IS THE ATTACHED TESTIMONY FROM COLORADO MEANT TO BE SPECIFIC TO QWEST'S OR VERIZON'S OPERATIONS IN WASHINGTON?

A. No, obviously the data and many of the arguments in the attached testimony rely on facts directly relevant to Qwest in Colorado. Hence, that data may not be as directly relevant to Qwest or Verizon in this proceeding (e.g., Qwest in Colorado operates under an alternative form of regulation and some of the testimony focuses on Qwest's obligations in this respect). Regardless, though some facts may differ between Colorado and Washington, these facts do not change my ultimate conclusions regarding the propriety of reciprocal compensation for ISP bound traffic and its inclusion in any inter-carrier compensation mechanism.

Q. PLEASE SUMMARIZE THE CONCLUSIONS REACHED IN THIS TESTIMONY.

A. Traffic passing between interconnected carriers uses the transport and switching resources of both carriers. Neither the types of resources or the level of resources required to accommodate this traffic differs depending upon whether the calls at issue are traditional voice or ISP calls. Indeed, the network is largely indifferent to whether a call is a voice call or an ISP-bound call as it must assign capacity to open a circuit for both and maintain that circuit over the length of the call. For these reasons, there are no discernable cost differences between voice and ISP traffic.

Q. QWEST AND VERIZON DETAIL A NUMBER OF REASONS WHY COSTS FOR CARRYING ISP TRAFFIC MAY BE LOWER THAN COSTS FOR CARRYING TRADITIONAL VOICE TRAFFIC. DO YOU AGREE WITH THEIR ANALYSIS?

A. No, I do not. After reviewing the testimony of Messrs. Brotherson and Trimble, as well as Dr. Taylor, it appears that the ILECs make the following arguments in this regard:

1. Switching costs are largely incurred in two forms; (1) “Setup” costs generated only once per call, and (2) “Duration” costs generated over the entire length of the call. Traditional rate design models have “spread” the per-call Setup costs across the duration of an *average call*, thereby arriving at average per minute of use rates. The average call duration historically used for this “spreading” process was between 3-4 minutes. An average ISP call may last longer than 20 minutes, hence, traditional rate design models based upon voice traffic characteristics are not particularly accurate in estimating average per minute of use costs for ISP

bound traffic.[1]

2. Because ISP traffic is often accommodated with the use of ISDN Primary Rate Interface (ISDN-PRI) lines, the switching resources necessary to accommodate this traffic are largely dedicated and non-usage sensitive in nature. Hence, these switching costs are not appropriately recovered in reciprocal compensation rates.[2]

3. "The proportion of ISP-bound traffic that arrives at the busy hour of the switch may differ from that of ordinary voice traffic. If the load distribution of ISP-bound traffic is flatter than that of voice traffic, then, on average, an incremental minute of ISP-bound traffic would cause a smaller increase in the capacity requirements of the switch than an incremental minute of voice traffic."[3]

4. "…the switches employed by CLECs to deliver primarily ISP bound traffic are more akin to "tandem switches" in that the termination of traffic to an ISP is facilitated through trunk-to-trunk switching configurations. Thus, it would be rational to expect that the underlying cost to terminate ISP traffic would be more reflective of "tandem switching" costs which are known to be lower than end office switching costs."

In the following testimony I will detail why each of these arguments can be either misleading, irrelevant or simply inaccurate. Further, I will provide additional evidence supporting my conclusion that costs associated with ISP bound traffic are identical to costs associated with carrying voice traffic when both types of traffic are carried on the same network.

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1 See *Phase B Direct Testimony of Dennis B. Trimble*, pg. 36, *Direct Testimony of William B. Taylor*, pgs. 34-35.

2 Dr. Taylor's testimony, pgs. 36-39.

3 *Id*., page 34.

<u>TELRIC METHODOLOGY</u>

Q. BEFORE YOU ADDRESS EACH OF THE ILEC'S ARGUMENTS DIRECTLY, ARE THERE CONCEPTUAL PROBLEMS WITH THE ILECS' APPROACH?

A. Yes, there are. Unfortunately, many of the arguments made by the ILECs in their direct testimony completely ignore the proper manner by which switched usage costs (a category of which reciprocal compensation is a subset) should be established. The FCC requires that reciprocal compensation rates be determined using its Total Element Long Run Incremental Cost methodology. As indicated by its name, TELRIC requires that cost be determined based upon the "total demand" for the *element* (defined primarily as a facility or a function) in question. With respect to switched usage, the *element* in question is the transport and termination of all traffic that uses the switched network. Costs associated with this traffic are appropriately calculated by dividing the entirety of the investment in transport and switching equipment required to accommodate this "total demand," by the total amount of traffic that is carried. The result of this calculation is an average, total element long run incremental cost associated with accommodating the total demand for the element (i.e., TELRIC).

Q. ARE THE ARGUMENTS RAISED BY THE ILECS CONSISTENT WITH THE FCC'S TELRIC METHODOLOGY?

A. No, they are not. The ILECs largely ignore the underpinnings of the FCC's TELRIC methodology when attempting to argue that switching costs differ between different types of traffic. The ILECs, with these arguments, invite the Commission to ignore the average incremental costs that represent TELRIC, and instead, focus on a subset of those costs, i.e., cost delivered to a certain type of customer, i.e., ISPs.

This is problematic for two reasons. First, it is inconsistent with the FCC's required methodology for establishing reciprocal compensation rates. Imagine the morass that would result if we decided to independently measure costs specific to carrying traffic for every individual customer (or even every customer group, i.e., pizza parlors, travel agencies, households with teenage children, senior citizens, etc.). Second, and more importantly, however, measuring transport and switching costs consistent with the ILEC's approach produces nonsensical results.

Q. PLEASE EXPLAIN YOUR SECOND POINT ABOVE IN MORE DETAIL?

A. Because switching facilities are broadly shared amongst a number of users and services, they are engineered and built to accommodate the entirety of the traffic they will need to support. It is impossible to effectively allocate these resources at a level of detail more precise than an average minute of use. This results from the fact that the cost causation activity (i.e., the primary cost driver), springs from the need to accommodate all traffic carried by the switch (the switch is purchased to accommodate total traffic flow and is engineered pursuant to the demands of the total traffic). Any attempt to allocate switched usage costs more precisely by the type of service or by the type of customer that will use the switch is arbitrary at best. The more rational approach uses the capacity of the switch as a measuring stick (i.e., minutes of use) and allocates the total investment of the switch amongst its various users depending upon how much capacity (i.e., how many minutes of use) they consume. Before the advent of reciprocal compensation and the ILEC's attempts to discern the costs of carrying a certain type of traffic (i.e. ISP traffic), it has been widely understood that service specific switched usage costs are largely meaningless. Discussions about whether one type of minute of use (i.e., voice) versus another type of minute of use (i.e. ISP) uses more or less of the switch's resources (i.e., capacity) are baseless.

Q. HOW SHOULD SWITCHED USAGE COSTS BE MEASURED?

A. Switches are generally considered to be capacity constrained, meaning, that any individual switch can only accommodate a certain amount of traffic at any given time of the day. It is this engineered capacity constraint that requires costs to be measured for all traffic that uses the finite capacity resources (i.e., usage). The level of constraint experienced by the switch is not impacted by the extent to which the switch is accommodating the traffic of a pizza parlor, a travel agency, a sporting goods store or an ISP (or any other customer specific group). Instead, the switch is constrained only by the <u>total number of minutes</u> it can accommodate at any given time (generally measured in Centum Call Seconds or "CCS" at the "busy hour"). Indeed, the traffic sensitive switch matrix (where the actual call-mapping takes place) is indifferent to the type of traffic it switches (as I will describe in more detail later) and can just as easily (and with the same level of resources) switch a call to a small business and/or to an ISP subscriber (or any other subscriber). Hence, to suggest that the traffic of one customer is more or less expensive to switch than the traffic of another customer, when they are both consuming the exact same finite capacity resources of the same switch is not credible. This is why the FCC's "Total Element" long run incremental costing standard is so important. It recognizes that only an incremental cost determined for the average minute of use will provide economically rational results consistent with the manner by which the economic constraints of the switch can be accurately measured.

<u>CALL LENGTH DIFFERENCES</u>

Q. ARE INTERNET CALLS LONGER ON AVERAGE THAN VOICE

CALLS AND DOES THIS IMPACT THE AVERAGE PER MINUTE OF USE COSTS ASSOCIATED WITH CARRYING THIS TYPE OF TRAFFIC?

A. While ISP-bound calls may be longer "on average" than traditional voice calls, this phenomenon does impact the *costs* that either type of traffic would generate on a telecommunications network *per se*. Simply put, the costs of carrying either type of traffic will depend upon a number of factors, one of which is the length of the call. The longer the call, the longer a circuit and the resources necessary to support that circuit will need to be assigned to the call (thereby generating costs directly assignable to the call). However, it is the length of the call, not the type of call that will dictate these costs. Said more generally, a 20 minute voice call and a 20 minute ISP call will generate exactly the same level of costs on the network and the network will be indifferent to the fact that one call terminates to a telephone and the other to an ISP's server. It is for this reason that we must be careful in reviewing the arguments raised by the ILECs in this regard.

Q. IS THEIR ANY VALIDITY TO THE ILEC'S ARGUMENTS REGARDING LONGER CALL LENGTHS?

A. The problem raised by the ILECs with this argument is really an issue more specific to the traditional *pricing* models (not *cost* models) that the ILECs have used to generate average, per minute costs. I would agree that switching costs are generally realized in two fairly distinct components; (1) *Setup* costs incurred once per call, and (2) *Duration* costs incurred over the entire duration of the call. Further, I would agree that traditional *pricing* models have spread per-call *Setup* costs across the *Duration* of an average call so as to arrive at average per minute of use rates. I would also agree that with the growth of machine-to-machine traffic (like ISP-bound traffic), characteristics defining the "average local call" have changed as calls have become longer in duration. Hence, traditional pricing models may no longer provide results with the same levels of accuracy as they did in the past.

Q. IS THERE A WAY TO OVERCOME THE INACCURACIES OF THOSE TRADITIONAL PRICING MODELS?

A. Yes, there is. If the ILECs no longer believe that the average call length estimates they have traditionally used are accurate, then a useful remedy would be to update those assumptions and recalculate the average length of a local call using more recent data. Unfortunately, this isn't the approach advocated by most ILECs. Instead, many ILECs have argued that a separate rate design should be devised for ISP bound calls while all other calls would remain under the traditional structure. This isn't a reasonable approach.

Q. WHAT IS A REASONABLE APPROACH?

A. There are two reasonable alternatives that could be relied upon to remedy the inaccuracies of the ILEC's traditional usage-based pricing models. First, as I described above, the ILECs could use more recent information to arrive at an average local call length more indicative of the traffic on their networks today (including ISP bound calls). However, I should add that I've seen traffic studies that provide current average local call lengths when incorporating ISP traffic. In general, because the volume of voice traffic still dominates the use of the public switched network, changes in the average length of local call are relatively minor. Hence, unless the traffic patterns in Washington differ substantially from those in other parts of the country, altering the rates based upon updated information would have very little impact on the existing rates.

Second, the Commission could simply reject the traditional pricing models and their attempt to arrive at an average per minute of use rate. Instead, like the Texas and California Commissions have done, the Washington Commission could establish a specific rate that would be applied to the first minute of a call (i.e., to recover the setup costs and one minute's worth of duration costs), and a separate rate that would apply to each subsequent minute of use (i.e., duration), thereby negating the need to spread "setup" costs over some average call length.

Q. WHICH OF THE METHODS DESCRIBED ABOVE WOULD YOU RECOMMEND?

A. The traditional pricing models were used to arrive at average, per minute of use rates so as to overcome administrative complexities and costs that result from administering a two-tiered rate structure. It is my understanding that these complications still exist and that many carriers (including many ILECs) still struggle with implementing and administering such a system.[4] For this reason, using updated data within the traditional pricing model provides the most effective method of arriving at reasonable, per minute costs without the additional administrative expense of a two-tiered structure.

ISDN-PRI CIRCUITS

Q. DO CLECS GENERALLY USE ISDN-PRI CIRCUITS TO CARRY ISP-BOUND TRAFFIC AND DOES THIS IMPACT THE USAGE SENSITIVE COSTS OF CARRYING THIS TRAFFIC?

A. Both CLECs and ILECs generally use ISDN-PRI trunks to carry ISP-bound traffic. However, the use of these types of circuits does not alter the usage sensitive nature of the costs incurred for carrying ISP traffic.

Q. PLEASE EXPLAIN THE DEFICIENCY IN DR. TAYLOR'S ARGUMENT.

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[4] Many of the carriers in both California and Texas where two-tiered rate structures are required, have agreed upon an "average" per minute rate that would reflect the actual rates adopted by the Commission. In other words, to overcome the complexities of a two-tiered rate structure, they have returned to the more traditional approach of spreading setup costs over an agreed upon call length.

A. Dr. Taylor's argument can be fairly characterized as follows: because PRI-ISDN trunks used to provide services to ISP customers are non-concentrated (i.e., are not engineered with a level of concentration greater than 1:1), these trunks are assigned a "dedicated" path through the switch. As such, any switching costs associated with the PRI line are "non-traffic sensitive" costs that should be removed from "traffic sensitive" reciprocal compensation costs/rates and recovered directly from the ISP via "non-traffic sensitive" charges.[5] Dr. Taylor's argument rests on a faulty premise.

Q. PLEASE EXPLAIN THE ERROR IN DR. TAYLOR'S ANALYSIS.

A. Simply put, ISDN-PRI lines are not afforded a "dedicated" path through the switch and, contrary to Dr. Taylor's assertion, they do use the switch's traffic sensitive elements (i.e., the internal transport links, time slot management equipment, routing/rating functions and the switch's processor) and do generate traffic sensitive costs.

Q. PLEASE DESCRIBE WHAT IS MEANT BY A "CONCENTRATION RATIO" GENERALLY AND A "1:1" CONCENTRATION RATIO SPECIFICALLY.

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[5] See Dr. Taylor's Direct Testimony at page 39.

A. When network planners determine the level of usage a given switch will be required to accommodate within the busiest hour (the question most specific to how much capacity the switch should be engineered to provide), they assume that not every customer will pick up the phone and try to make a call (or receive a call) at any give time. Instead, based upon past traffic data, they assume that only 1 out of every 6 customers, for example, will require the resources of the switch at any point in time. As a result of this analysis, they then engineer a switch so that it can accommodate the traffic resulting from one out of every six customers at any specific time. By assuming 6 customers, for example, for every available "time slot" in the switch (i.e., a call path that allows a call to be routed to its destination by using the switch's mapping fabric), engineers are said to have adopted a concentration ratio of 6:1 (6 customers for each individual switching timeslot). This method of concentration allows the engineers to share the switching fabric more efficiently amongst a number of services/customers thereby reducing the overall costs of carrying traffic on a per-subscriber basis.

A 1:1 concentration ratio requires engineers to assume that a call path will always be available for purposes of accommodating the traffic of the trunk/line in question. Often called a "non-blocking" circuit, 1:1 concentration is provided as a higher grade of service and circuits provided with a 1:1 concentration ratio are generally more expensive to provision than a trunk/line with a higher concentration ratio.

Q. IS A PRI-ISDN TRUNK ENGINEERED WITH A 1:1 CONCENTRATION RATIO PROVIDED A "DEDICATED" PATH THROUGH THE SWITCH?

A. No, it is not. Indeed, the word "dedicated" is a misnomer that can confuse the issue of how PRI-ISDN circuits are provisioned. First, ISDN is by definition a switched service (not a dedicated service) that relies heavily upon the software inherent in an ISDN capable switch for purposes of managing traffic. Even though ISDN circuits may be provisioned with 1:1 concentration ratios, they nonetheless share the same finite switching resources (i.e., internal transport links, the switch fabric and the processor), as do other circuits. ISDN circuits are allocated switching resources as they are needed (i.e., only when a call is made), regardless of the concentration ratio to which they've been engineered. The only difference between an ISDN circuit engineered with a 1:1 concentration ratio versus a more concentrated circuit (e.g., 4:1 or 6:1) is the level of priority the 1:1 circuit is afforded in the process of allocating switching resources in "real-time." While this may impact which circuits experience "blocking" (i.e., no time slots available) in a congested situation (i.e. 1:1 circuits would not be blocked while more concentrated circuits likely would), it does nothing to impact the fact that all of these switched services are still consuming usage sensitive resources.

Q. ARE LESS HIGHLY CONCENTRATED CIRCUITS MORE EXPENSIVE THAN MORE CONCENTRATED CIRCUITS?

A. Yes, they are. To the extent that CLECs offer circuits with lower levels of concentration, and thereby offer a higher quality of service, their switching recourses required to accommodate the same level of traffic will be higher. Hence, contrary to Dr. Taylor's assertion, CLECs who provide a higher quality of service via lower concentration will have higher switching costs per customer (and per minute) than will an ILEC with lower levels of concentration.

Q. DO THE SWITCHING COST MODELS THAT THE MAJORITY OF ILECS RELY UPON TO DERIVE USAGE SENSITIVE COSTS CONSIDER ISDN-PRI TRUNKS TO USE PREDOMINATELY TRAFFIC SENSITIVE COMPONENTS OF THE SWITCH?

A. Yes. Contrary to Dr. Taylor's argument, switching cost models like the Telcordia SCIS model (upon which I understand both Qwest and Verizon rely to support their switch related costs), identify traffic to/from an ISDN circuit as traffic sensitive costs. Generally, SCIS identifies particular components of a switch (i.e., the line card, a switching module, internal transport links, the switch's processor, etc.) as either traffic sensitive or non-traffic sensitive resources based upon the extent to which these particular switching resources vary with respect to the amount of traffic the switch must accommodate. In essence, the model builders ask: If traffic were to increase beyond a certain level, would the need for this particular resource and/or piece of equipment increase accordingly? Simplistically, if the answer to this question is "Yes," then that piece of equipment is assumed to be a traffic sensitive component of the switch. If the answer is "No," this piece of equipment is considered to be non-traffic sensitive. After this distinction is made, then services and/or functions accommodated by the switch via the use of traffic sensitive components are considered to consume traffic sensitive resources that could otherwise be used by other services/functions. As such, they are considered to generate usage sensitive costs. ISDN-PRI services (regardless of concentration ratio) require that the switch map originating traffic data to terminating address information. Likewise, the processor and the switch fabric are required to "set-up" ISDN-PRI calls and ultimately to assign appropriate terminating trunk groups for delivery to the called party. All of these functions require the use of traffic sensitive switch resources (i.e., internal transport links, timeslot management resources and switch processing time). Likewise, the use of these traffic sensitive resources generates traffic sensitive costs.

Q. IS THIS THE FIRST TIME YOU'VE SEEN DR. TAYLOR MAKE THIS ARGUMENT REGARDING THE NON-TRAFFIC SENSITIVE NATURE OF ISDN-PRI LINES ENGINEERED AT 1:1 CONCENTRATION?

A. No. Dr. Taylor on behalf of Bell Atlantic (now also "Verizon") has made this argument over the past six months in a number of arbitrations wherein the issue of reciprocal compensation is being decided. Indeed, Verizon (based upon Dr. Taylor's advice), has gone so far as to remove from its Telcordia SCIS output, the majority of traffic sensitive costs associated with an ISDN-PRI line for purposes of proposing extremely low per-minute termination rates (rates that would, pursuant to Verizon's proposal, apply only to traffic terminated by CLECs, not Verizon). There are two points worth mentioning with respect to Verizon's championing of this same argument. First, it is noteworthy that Verizon, in an effort to implement this completely unsubstantiated theory, had to make a manual intervention in the SCIS software for purposes of removing a large component of traffic sensitive costs associated with ISDN-PRI usage. The SCIS model, when left to function as designed, allocated the vast majority of ISDN-PRI costs as traffic sensitive costs because ISDN relies, as I stated above, almost exclusively on the traffic sensitive resources of the switch for purposes of processing traffic. In short, a SCIS user must override the model in order to implement the theory that ISDN-PRI circuits somehow enjoy a "dedicated" path through the switch and therefore, use only non-traffic sensitive switch components. Second, Verizon eventually had to admit that ISDN-PRI services actually use more resources of the switch's processor (a usage sensitive cost of the switch) than other types of more traditional lines/trunks. Verizon modified its testimony accordingly.[6] This results from the fact that ISDN is a software driven service inextricably tied to the switch processors' ability to interpret the ISDN protocol for purposes of accommodating traffic in this format. The switch's processor actually requires more time to

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[6] See the cross-examination transcript of Mr. Gary E. Sanford (Director-Economic Costs/Regulatory Support), Docket No. A-310630F.0002, Before the Pennsylvania Public Utility Commission (May 2000).

process a call delivered via ISDN (measured in "milliseconds" and identified within the SCIS model in the "real-time table") than it does to process other types of more traditional traffic.

Q. ARE THERE OTHER IMPORTANT POINTS THAT SHOULD BE MADE ABOUT ISDN-PRI TRUNKS AND/OR ANY OTHER TRUNKS ENGINEERED AT A CONCENTRATION RATIO OF 1:1?

A. Yes. ILECs also rely upon ISDN-PRI and other digital trunking formats that are engineered in their switches with very low levels of concentration including 1:1. Indeed, it is exactly this type of trunking that is used to connect medium and large sized Private Branch Exchange (PBX) facilities to their networks. Obviously, PBX customers represent some of the ILECs' largest, most traffic intensive customers and the volume of traffic generated by these large customers constitutes a significant portion of the ILEC's total usage. This results from the fact that PBX locations can aggregate the traffic generated by hundreds or thousands of individual telephone sets and deliver that traffic to the ILEC switch on a single, or multiple, ISDN-PRI trunk groups (and/or other types of digital or analog trunking facilities). In reality, a carrier's switch (either ILEC and/or CLEC) cannot and does not distinguish between a customer using a PRI-ISDN line for purposes of accommodating ISP traffic or for use by its PBX. As such, to the extent that traffic generated by large PBX customers is already included in cost studies supporting reciprocal compensation rates, the costs associated with accommodating end-user trunking at low levels of concentration (whether such arrangement actually increases per-unit costs or decreases per-unit costs) should already be incorporated in the studies.

<u>LOAD DISTRIBUTION</u>

Q. DR. TAYLOR, AT PAGE 36 OF HIS DIRECT TESTIMONY, SUGGESTS THAT THE "LOAD" CHARACTERISTICS OF ISP TRAFFIC MAY CAUSE COST DIFFERENCES WHEN COMPARED TO VOICE TRAFFIC. DO YOU AGREE?

A. As a general matter I agree that the load characteristics of a given switch will impact the costs associated with carrying traffic on that switch. I do not agree, however, that the inherent load characteristics of ISP-bound traffic, or any other service-specific traffic for that matter, will result in cost differences when compared to other types of traffic. Load characteristics define costs specific to a switch (i.e., a given facility), not the characteristics of a certain type of traffic.

Q. PLEASE EXPLAIN THE PROBLEM WITH DR. TAYLOR'S ANALYSIS IN MORE DETAIL.

A. Dr. Taylor includes the following in his testimony at page 34:

> "The proportion of ISP-bound traffic that arrives at the busy hour of the switch <u>may</u> differ from that of ordinary voice traffic. <u>If</u> the load distribution of ISP-bound traffic is flatter than that of voice traffic, then, on average, an incremental minute of ISP-bound traffic would cause a smaller increase in the capacity requirements of the switch than an

> incremental minute of voice traffic." [emphasis supplied]

There are a number of points to make about Dr. Taylor's statement in this respect. First, it is extremely important that the Commission recognize that Dr. Taylor is not making a factual statement about whether ISP-bound traffic does indeed exhibit load distribution characteristics different than traditional voice grade traffic. Dr. Taylor is only positing that *if ISP-bound traffic did exhibit such characteristics* (i.e., a less peak oriented load distribution), *then* its patterns of cost causation *may* differ. Though I've scoured the testimony of Dr. Taylor and Mr. Brotherson, I didn't find any contention on the part of Qwest, that as a factual matter, ISP-bound traffic indeed does exhibit any of these less peak oriented traffic characteristics. Hence, even though Dr. Taylor's statement above is largely true as a theoretical matter, it doesn't indicate whether ISP bound traffic will be less or perhaps more expensive to carry. For example, it would be equally true to state as follows:

> The proportion of ISP-bound traffic that arrives at the busy hour of the switch may differ from that of ordinary voice traffic. If the load distribution of ISP-bound traffic is ~~flatter~~ less flat than that of voice traffic, then, on average, an incremental minute of ISP-bound traffic would cause a ~~smaller~~ larger increase in the capacity requirements of the switch than an incremental minute of voice traffic

Q. PLEASE BRIEFLY EXPLAIN WHY A FLATTER DISTRIBUTION OR A MORE PEAKED DISTRIBUTION OF TRAFFIC IS RELEVANT TO

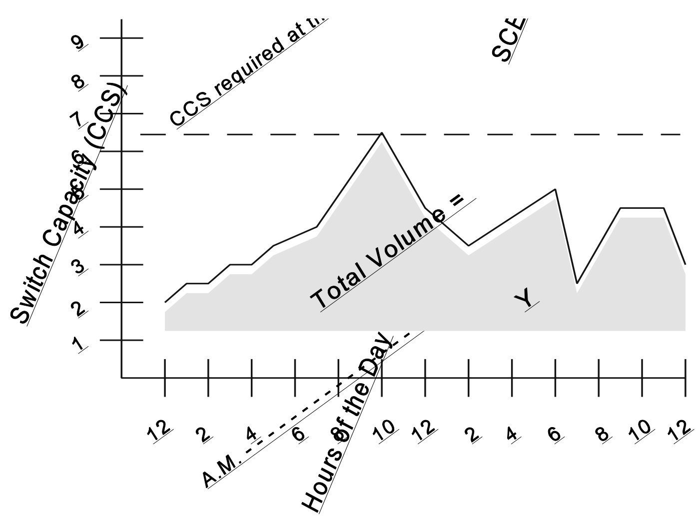
SWITCHING INVESTMENT AND SUBSEQUENTLY, TO INCREMENTAL COSTS.

A. Switches are engineered to provide a particular "quality of service" at any given period of the day. "Quality of service" in this respect is generally measured by the availability of switch resources that are necessary to complete a call demanded by an end user. For this reason, the number of call attempts that can be successfully accommodated compared to the call attempts that are rejected because of insufficient switch resources is generally used as a measure of "quality of service." The higher the number of calls that can be accommodated compared to the total number of calls attempted, the higher the quality of service.

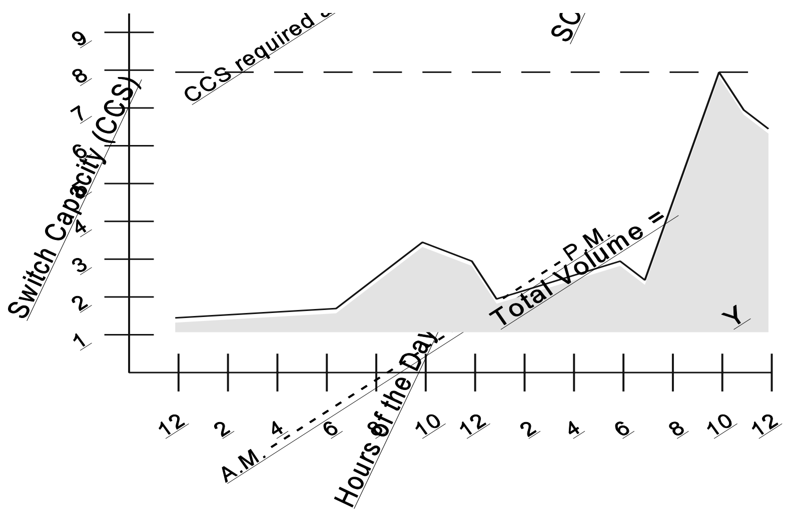
Because traffic isn't constant throughout a day, engineers must build a switch to provide a target "quality of service" by engineering the switch's resources to accommodate a particular percentage of call attempts during the switch's busiest period. This period is generally referred to as the "busy hour." Said another way, in order to accommodate a level of traffic sufficient to meet the target quality of service at all points of the day, the switch must be built (i.e., investments must be made) to accommodate the completion of a particular percentage of call attempts within the timeframe wherein the switch's resources will be most taxed. If the target quality of service can be maintained during this time period (i.e., the "busy hour"), then the target quality of service is, by definition, likely to be accommodated at less busy periods.

Q. HOW DOES THIS IMPACT THE INVESTMENTS REQUIRED TO ACCOMMODATE PEAKED OR "FLAT-LINE" TRAFFIC?

A. Obviously, the more traffic that must be accommodated in a switch's "busy hour," the more capacity a switch must have available, and hence, the higher the investment necessary to accommodate that traffic. Hence, if traffic patterns for a given switch are very peaked in the busiest hour, capacity sufficient to accommodate that peak usage is likely to be higher than that required of a switch handling traffic that is relatively balanced over a given day. Where traffic is relatively balanced, the switch can accommodate a larger volume of traffic at a lower level of capacity. The following descriptive diagrams help illustrate this point:



The switch in Scenario 1 above requires approximately 6.5 CCS to accommodate a total traffic volume of *Y*. However, the switch below (in Scenario 2) requires 8 CCS to accommodate the same total traffic volume (*Y*). This results from the fact that the traffic load accommodated by the switch in Scenario 2 is far more peaked than the traffic load in Scenario 1.



The more CCS capacity required to support a given volume of traffic, the higher the per minute cost associated with that traffic (all else being equal). Hence, the traffic in Scenario 2 above (because of its peaked nature) will exhibit higher per minute of use costs than will Scenario 1.

Q. IS IT DIFFICULT TO MAKE A GENERAL STATEMENT ABOUT THE PEAKED NATURE OF ISP-BOUND TRAFFIC?

A. Yes, it is. The extent to which the load distribution of a switch is impacted by either ISP-bound traffic or voice traffic is impacted largely by the customer base (and the calling patterns of those customers) that a particular switch serves. Hence, broad general statements about the peaked nature of ISP-bound traffic, or voice traffic for that matter, are difficult to support. The load distribution of any given switch is likely to be fairly specific to that switch and extrapolating data from any given switch to another is unlikely to yield relevant information. It is for this reason, I would imagine, that Dr. Taylor largely makes this particular argument as a theoretical matter.

Q. REGARDLESS OF THE FACT THAT IT IS DIFFICULT TO MAKE BROAD STATEMENTS ABOUT THE PEAKED NATURE OF ISP-BOUND TRAFFIC, IS IT LOGICAL TO ASSUME THAT A NETWORK CARRYING PREDOMINANTLY ISP-BOUND TRAFFIC WOULD EXHIBIT MORE PEAKED LOAD DISTRIBUTION THAN A SWITCH THAT ALSO CARRIED LARGE AMOUNTS OF RESIDENTIAL AND BUSINESS VOICE TRAFFIC?

A. Yes, it is. Contrary to Dr. Taylor's hypothetical, it is likely that traffic carried by a network that has an inordinate number of ISP end users who receive primarily dial-up, Internet-bound traffic will exhibit characteristics consistent with Scenario 2 above (i.e., its load distribution is likely to be far more peaked). A network serving a more mature customer base, on the other hand, is likely to have far more distributed calling patterns more consistent with Scenario 1. Because ILECs have mature networks and serve a broad array of end users, the load distribution on their switches is likely to be more evenly distributed than that of a CLEC switch that serves primarily ISP customers. ILEC switches are more likely to accommodate both a business peak, a residential peak and an Internet users' peak, each of which is likely to occur in a different part of the day (between 8-10 a.m. for business customers, 6-9 p.m. for residential customers and 9-11 p.m. for Internet users). Hence, ILEC switches are more likely to accommodate larger volumes of calling with a comparatively smaller peak-load.

Q. WOULD CLEC SWITCHES LIKELY HAVE LOAD DISTRIBUTION CHARACTERISTICS MORE COMPARABLE TO SCENARIO 2?

A. Yes, I believe they would. Because CLECs are building their customer base from scratch, it is likely that if they are more successful in attracting a certain type of customer (ISP customers for example), that their traffic patterns will exaggerate the peak associated with that particular customer type without the benefit of additional traffic generated by other types of customers (i.e., a predominance of residential and business usage) that can be used to smooth the traffic load over the day. Hence, it is likely that CLECs will have higher peak usage and lower non-peak usage much like the load distribution in scenario 2 (only likely more pronounced in some circumstances). For this reason, CLECs are likely to experience higher CCS investments per peak load (and as a result, higher per minute of use costs). Said another way, while ISP-bound traffic may be helpful in smoothing the distribution of traffic on a switch that also includes a residential and business users peak (i.e. an ILEC switch) thereby reducing per minute of use costs for all traffic, on a switch without both of these peaks, ISP-bound traffic is likely to drive the "busy hour" and thereby increase the investment specific to ISP-bound traffic.[7]

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[7] It is important to note that one of the primary cost drivers identified within the Telcordia SCIS model is the "% of traffic in the busy hour." SCIS uses a company's "%

<u>TRUNK-TO-TRUNK SWITCHING</u>

Q. PLEASE SUMMARIZE VERIZON'S POSITION REGARDING TRUNK-TO-TRUNK SWITCHING AND ITS IMPACT ON COSTS SPECIFIC TO ISP BOUND TRAFFIC.

A. Mr. Trimble states as follows at page 38 of his Direct Testimony:

> "…the switches employed by CLECs to deliver primarily ISP bound traffic are more akin to "tandem switches" in that the termination of traffic to an ISP is facilitated through trunk-to-trunk switching configurations. Thus, it would be rational to expect that the underlying cost to terminate ISP traffic would be more reflective of "tandem switching" costs which are known to be lower than end office switching costs."

Unfortunately, this is the extent of Mr. Trimble's argument. Mr. Trimble does not provide any further insight into why he believes ISP bound traffic would exhibit "trunk-to-trunk" characteristics more so than would voice traffic nor does he explain why this would reduce costs associated with carrying ISP bound traffic. In short, Mr. Trimble's argument is largely unsupported.

Q. HAVE YOU ADDRESSED THIS SAME ARGUMENT BY VERIZON IN THE PAST?

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of traffic in the busy hour" to measure the amount of total traffic accommodated by the switch that will occur in the busiest hour. For CLEC switches where a large amount of ISP traffic may be accommodated in the busiest hour, yet low levels of residential or business calling can be expected to fill the switch in other time periods, average costs per minute are likely much higher than those on ILEC switches with more robust market penetration (all else being equal).

A. Yes, I have. In the California generic reciprocal compensation proceeding (Rulemaking 0-02-05) Verizon raised issues similar to that raised by Mr. Trimble above.

Q. ARE CLEC SWITCHES THAT ACCOMMODATE SOME LEVEL OF ISP BOUND TRAFFIC MORE LIKE TANDEM SWITCHES WITH LOWER PER MINUTE OF USE COSTS?

A. No, they are not. Verizon's argument is extremely misleading. Initially, Verizon focuses solely on a comparison of switch *functionality* and completely ignores the other *cost* components of terminating traffic. Even on Verizon's granular level, however, Verizon attempts, via this argument, to suggest that because some amount of ISP traffic is delivered on interconnection trunks, and then switched to ISDN-PRI trunks, this "trunk-to-trunk" architecture is akin to the manner in which tandem switches switch inter-office traffic. Verizon's argument has many holes. First, all traffic for which reciprocal compensation is due (including voice traffic) is delivered to the terminating carrier (either ILEC or CLEC) on interconnection trunks. Likewise, anytime an end user customer is served via either an analog or digital trunk (i.e., T1, PBX, ISDN, Digital Data Circuit, etc.), the end office switch performs a "trunk-to-trunk" function. However, this is the function of an end office, Class 5 switch connecting a dialed telephone number with a called telephone number. This is a very different function than that performed by a tandem switch (Class 4) acting as an intermediary between two independent, fully functional Class 5 switches. The functions performed by the Class 5 and Class 4 switch are very different and the costs incurred are significantly different as well. Stated as simply as possible, though some calls switched by Class 5 end office switches are connected between two trunks (i.e., "trunk-to-trunk"), this does not in any way make the costs incurred in performing that switching function similar to the costs incurred to provide tandem switching.

Q. TANDEM SWITCHING COSTS ARE GENERALLY LOWER THAN END OFFICE SWITCHING COSTS, IS THAT BECAUSE TANDEMS PERFORM ONLY TRUNK-TO-TRUNK SWITCHING FUNCTIONS?

A. No. Per minute tandem switching costs are generally lower than end office switching costs primarily because tandem switches are utilized more fully. Tandem switches manage the traffic of multiple end office switches with varying busy hour peaks and load distribution requirements. Hence, a well-managed tandem switch can be largely utilized throughout most of the day (i.e., as discussed earlier, it has a very flat load distribution relative to its busy hour traffic peak). This is the primary reason why tandem switching costs are much lower than end office switching costs.

Q. DON'T TANDEM SWITCHES ALSO REQUIRE LESS EQUIPMENT BECAUSE THEY MANAGE ONLY TRUNK-TO-TRUNK CALLING?

A. It is true that tandem switches do not require equipment like ring-tone generators and/or analog/digital conversion units that are generally needed to accommodate line-side connectivity (one of the functions of a Class 5, end office switch). Hence the relative initial investment costs of a tandem switch are lower than those of an end office. However, this has no impact on the usage sensitive costs generated by the tandem switch relative to that of an end office switch (nor does it impact the costs of trunk-to-trunk switching relative to trunk-to-line switching). This results from the fact that these devices are largely non-usage sensitive and are recovered on a flat-rated basis within the "line port" monthly charge. Said another way, the investments in the pieces of equipment that generally distinguish between trunk-to-trunk connections and trunk-to-line connections have no impact on the usage sensitive costs that are at issue with respect to proper reciprocal compensation rates. Hence, there is no basis for Verizon's argument that because ISP traffic is largely trunk-to-trunk in nature, the usage sensitive costs of terminating this traffic are more similar to a tandem switch than they are to an end office switch.

Q. ARE YOU AWARE THAT THE WASHINGTON COMMISSION HAS APPROVED TANDEM SWITCHING RATES THAT ARE MORE THAN END OFFICE SWITCHING RATES ON A PER MINUTE OF USE BASIS?

A. Mr. Trimble in exhibit DBT-2 includes tandem switching rates that are greater than "central office switching" rates on a per minute of use basis. I am also informed by counsel that Qwest's tandem switching rates exceed its end office switching rates on a per minute of use basis.

Q. DOES THIS CONFLICT WITH YOUR DISCUSSION ABOVE?

A. No, it does not. It is important to remember that the traffic characteristics of the network (primarily utilization) will have a large impact on the costs that result from using that network. If the Washington Commission has determined that Qwest's and Verizon's particular traffic patterns warrant higher tandem switching rates than end office rates, this could be a perfectly legitimate finding. I would simply note that such a finding isn't indicative of the majority of switched usage cost analysis I am familiar with. Regardless, this finding does not contradict the discussion above regarding costs specific to "trunk-to-trunk" traffic. Contrary to the inherent assumption in Mr. Trimble's argument, CLECs employ switches that encompass both the functions of a Class 4 (tandem) and Class 5 (end office) switch.[8] Hence, the costs associated with traffic terminating on these CLEC switches are not comparable to costs generated solely by an ILEC tandem in the ILEC network as suggested by Mr. Trimble (i.e., consistent with his contention that CLEC switches accommodate primarily trunk-to-trunk traffic). Instead, costs experienced by CLECs when terminating traffic are more comparable to costs incurred by the ILEC in providing a combination of central office switching,

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8 Indeed, CLEC switches are generally included in the Local Exchange Routing Guide ("LERG"), as "Class 4/5" switches, a specific nomenclature allowed by the LERG to identify singular switches that perform both Class 4 and Class 5 functions.

transporting traffic to the tandem, and switching that traffic at the tandem level for termination on a CLEC network (i.e., the functions required to ready traffic for termination to a single point of interconnection).

Q. MR. TRIMBLE AT PAGE 41 OF HIS TESTIMONY AND IN EXHIBIT DBT-2 PROVIDES THE COMMISSION WITH AN ALTERNATIVE RATE PROPOSAL FOR ISP-BOUND TRAFFIC. SHOULD THE COMMISSION ADOPT MR. TRIMBLE'S PROPOSAL?

A. No, it should not. Mr. Trimble's rate proposal relies upon many of the same misguided theories I've rebutted above. For example, Mr. Trimble's rate proposal bases the costs of ISP bound traffic on Verizon's tandem switching costs. There is little if any information in Mr. Trimble's testimony to support this assumption. Likewise, as I've described above, the costs of terminating ISP bound traffic switched by a fully functioning Class 5 switch (the process by which the vast majority of CLECs switch ISP bound traffic), are not comparable to tandem switching costs. Further, Mr. Trimble assumes that ISP bound calls will, on average, last approximately 30 minutes. I didn't see anywhere in Mr. Trimble's testimony where he supported this particular assumption with any factual information. Mr. Trimble also fails to identify the manner by which carriers should identify and separate "ISP bound" traffic from other types of traffic for purposes of implementing his proposal, or estimate the amount of administrative expense that would be certainly be generated by doing so (and hence, should also be recoverable). In short, Mr. Trimble hasn't adequately supported his proposal. And, he has based his proposal on unsound theory. Mr. Trimble's proposal should be rejected.

<u>"SYMMETRICAL COMPENSATION"</u>

Q. WHAT RATE OF COMPENSATION SHOULD CLECS BE ALLOWED TO CHARGE FOR TRAFFIC DELIVERED TO THEM VIA INTERCONNECTION TRUNKS?

A. When a CLEC's interconnecting switch serves a geographic area comparable to the area served by the ILEC's tandem switch, the CLEC should be allowed to assess a rate equal to the end office switching, tandem switching and transport rates assessed by the ILEC when terminating traffic delivered to the tandem switch. This rate of compensation is often referred to as the "tandem rate" and I will refer to it as such throughout the remainder of my testimony.[9]

Q. WHY SHOULD CLECS BE ALLOWED TO ASSESS THE TANDEM

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[9] It is important not to confuse the term "tandem interconnection rate" with "tandem switching costs" as discussed earlier. The tandem interconnection rate is actually a combination of end office switching, transport and tandem switching *functions*. Hence, tandem switching costs resulting from the tandem switching function are but one component of the larger tandem switching interconnection rate. This is important because ILECs have contended in the past, that CLEC switches serve only the end office switching function in the traditional ILEC hierarchy. However, CLEC switches generally provide both an end office and tandem switching function (Class 4/5) within the CLEC network, thereby, making them functionally equivalent to the ILEC two-switch hierarchy.

RATE WHEN THEY MEET THIS SINGULAR CRITERIA?

A. FCC Rule 51.711(a)(3) establishes the proper standard to which CLECS should be held for purposes of assessing a tandem termination rate. Rule 51.711(a) states as follows:

> §51.711 Symmetrical reciprocal compensation.
>
> (a) Rates for transport and termination of local telecommunications traffic shall be symmetrical, except as provided in paragraphs (b) and (c).
>
> (1) For purposes of this subpart, symmetrical rates are rates that a carrier other than an incumbent LEC assesses upon an incumbent LEC for transport and termination of local telecommunications traffic equal to those that the incumbent LEC assesses upon the other carrier for the same services.
>
> (2) In cases where both parties are incumbent LECs, or neither party is an incumbent LEC, a state commission shall establish the symmetrical rates for transport and termination based on the larger carrier's forward-looking costs.
>
> (3) *Where the switch of a carrier other than an incumbent LEC serves a geographic area comparable to the area served by the incumbent LEC's tandem switch, the appropriate rate for the carrier other than an incumbent LEC is the incumbent LEC's tandem interconnection rate.* [emphasis added]

Q. EARLIER YOU MENTIONED A SINGLE CRITERIA THAT MUST BE MET BEFORE A CLEC CAN CHARGE A TANDEM TERMINATION RATE. WHAT IS THAT CRITERIA?

A. The FCC has established single criteria that if met, would allow a CLEC to charge the tandem termination rate. That is, “where the switch of a carrier other than an incumbent LEC serves a geographic area comparable to the area served by the incumbent LEC's tandem switch.” Therefore, pursuant to rule 51.711(a)(3), if a CLEC’s switch covers a geographic area “comparable” to the area served by the incumbent LEC's tandem switch, then the appropriate rate of compensation to be charged by the CLEC is the ILEC's tandem inter-connection rate.

Q. HAVE ILEC'S ARGUED THAT ADDITIONAL CRITERIA MUST BE MET BEFORE A CLEC CAN ASSESS THE TANDEM INTERCONNECTION CHARGE?

A. Yes, many ILEC's have suggested that a CLEC must also prove that its switch serves a similar function to that served by the ILEC's tandem switch before the CLEC can legitimately assess the tandem interconnection rate (i.e., a "functional equivalency" test).

Q. WHAT IS THE BASIS FOR THE ARGUMENT THAT THE FCC REQUIRES A FUNCTIONAL EQUIVALENCY SHOWING BEFORE CLECS CAN RECIPROCALLY ASSESS THE ILEC'S TANDEM INTERCONNECTION RATE?

A. The ILECs generally point to paragraph 1090 of the FCC's *First Report and Order and Further Notice of Proposed Rulemaking* in CC Docket No. 96-98 to support their arguments in this regard. Paragraph 1090 states as follows:

> 1090. We find that the "additional costs" incurred by a LEC when transporting and terminating a call that originated on a competing carrier's network are likely to vary depending upon whether tandem switching is involved. We, therefore, conclude that states may establish transport and termination rates in the arbitration process that vary according to whether the traffic is routed through a tandem switch or directly to an end-office switch. <u>In such event, states shall also consider whether new technologies (e.g. fiber ring or wireless networks) perform functions similar to those performed by an incumbent LEC's tandem switch and thus, whether some or all calls terminating on the</u>

> new entrant's network should be priced the same as the sum of transport and termination via the incumbent LEC's tandem switch. Where the interconnecting carrier's switch serves a geographic area comparable to that served by the incumbent LEC's tandem switch, the appropriate proxy for the interconnecting carrier's additional costs is the LEC tandem interconnection rate. [emphasis added]

Q. IN YOUR OPINION DOES THIS PARAGRAPH REQUIRE CLECS TO PROVE THAT THEIR SWITCHES SERVE SIMILAR FUNCTIONS TO THOSE PERFORMED BY AN INCUMBENT'S TANDEM SWITCH?

A. No, it does not. The last sentence of this paragraph couldn't be clearer, especially when read in combination with the language the FCC ultimately decided upon for purposes of codifying this section of its order in its rules (the language as shown above in Rule 51.711). That is, it is clear that "where the interconnecting carrier's switch serves a geographic area comparable to that served by the incumbent LEC's tandem switch, the appropriate proxy for the interconnecting carrier's additional costs is the LEC tandem interconnection rate" (i.e. comparable geographic coverage).

Q. ASSUME THAT A SECOND TEST IS ALSO REQUIRED BEFORE CLECS CAN ASSESS THE TANDEM INTERCONNECTION RATE. DOES THE FCC'S LANGUAGE IN PARAGRAPH 1090 PROVIDE ANY INSIGHT INTO HOW THIS CRITERIA MIGHT BE MET?

A. Yes it does. First, it is important to note that the FCC uses the term "similar" when describing the functions performed by the CLEC's switch and the ILEC tandem switch. The FCC's did not use the term "identical" or even "the same." It is clear the FCC purposefully contemplated a much lower standard of comparison (i.e. "similar") in this circumstance. Second, the FCC specifically directs state commissions to consider the extent to which new technologies might be used to meet its test of similar functionality (it specifically mentions fiber ring based architectures). This point is important because it clearly undercuts the ILEC's traditional arguments regarding the extent to which a CLEC must employ a hierarchical switching structure wherein a traditional Class 4 (tandem) switch is used in combination with a subtending Class 5 (end office) switch. It is clear that the FCC contemplated that the CLECs need not duplicate the ILECs network architecture in this respect in order to charge the tandem interconnection rate. It is for this reason the FCC spoke to similar network "functionality" instead of similar network "architecture."

Q. EXPLAIN FURTHER YOUR POINT THAT THE FCC SPECIFICALLY HIGHLIGHTED THE COMPARATIVE VALUE OF THE TWO NETWORK "FUNCTIONALITIES" AS OPPOSED TO NETWORK "ARCHITECTURES."

A. Obviously, the FCC could have simply said that if a CLEC employs the same network architecture as that deployed by the ILEC the CLEC may charge a rate equal to the ILEC's tandem interconnection rate. The FCC, however, specifically did not establish such a strict requirement. If indeed the FCC did establish a "functional" test, (which as I stated earlier I don't believe it did), it is clear that it established a far more flexible standard than that generally proffered by the ILECs (i.e. identical network architecture). That is, the CLEC must show only that its network performs a similar function to that performed by the ILEC's tandem switch. In this case, the function at issue is the transport and termination of local traffic to a geographic area comparable to that served by the ILEC's tandem.

Q. DO THE FCC'S RULES RELY UPON SOUND ECONOMIC AND REGULATORY POLICY?

A. Yes, they do. CLEC's often choose to connect to an ILEC's tandem switch because the tandem switch serves as a single point of connection to a large geographic area and a large number of customers. The tandem interconnection reduces the amount of trunking they must provision to accommodate a given level of traffic and reduces the network investment they must make to serve a given number of customers. By providing the ILEC a similar single point of contact at the ILEC's switch, the CLEC similarly provides the ILEC access to the totality of its customer base in a given geographic region and reduces the total network deployment required on the ILEC's part to reach those customers. In short, the ILEC and the CLEC trade similar rights to terminate traffic within a comparable geographic region. Because both carriers are provided symmetrical and reciprocal termination rights within a geographic region, the rates each is allowed to charge are best established at reciprocal and symmetrical levels as well (i.e., the rate the ILEC charges the CLEC to interconnect and terminate traffic at a single point of interconnection).

Q. DO CLECS CONNECT DIRECTLY TO ILEC END OFFICES?

A. Yes, in some circumstances they do connect directly to an ILEC end office.

Q. DOES THIS ALTER THE RECIPROCAL COMPENSATION OBLIGATIONS YOU'VE DISCUSSED ABOVE?

A. No. Connecting directly to an ILEC's end office switch does remove from the CLEC the obligation to incur costs for terminating traffic originated by the ILEC that are represented by the tandem switching and tandem transport rate elements. The fact that the CLEC has chosen to extend its facilities (or lease facilities) directly to the ILEC end office for purposes of *delivering* traffic to the ILEC network, does not change the obligation of the ILEC with respect to traffic *terminating* to the CLEC. The ILEC is still provided a single point of interconnection to reach the entirety of the CLEC's customer base within a geographic area comparable to that served by the ILEC tandem, and is still using the same facilities of the CLEC to accomplish such termination. Hence, the rate the ILEC pays to terminate traffic in such a circumstance (i.e., the tandem interconnection rate) remains unchanged.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.