EXHIBIT NO. __________ (JHW-4T)

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of the Petition of Qwest Corporation to Initiate a Mass-Market Switching and Dedicated Transport Case Pursuant to the Triennial Review Order	**Docket No. UT-033044**

RESPONSE TESTIMONY OF

JOSEPH H. WEBER

ON BEHALF OF

QWEST COMMUNICATIONS

FEBRUARY 2, 2004

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I. INTRODUCTION

Q. ARE YOU THE SAME JOSEPH WEBER WHO SUBMITTED DIRECT TESTIMONY IN THIS DOCKET?

A. Yes.

II. PURPOSE OF RESPONSIVE TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR RESPONSE TESTIMONY?

A. The purpose of my testimony is to respond to the Network Architecture testimony of AT&T witness Robert V. Falcone (Exhibit No. RVF-1T dated December 22, 2004). My response testimony will demonstrate that the differences between the ILEC network architecture and an efficient CLEC's network architecture do not, in fact, place enormous economic and operational burdens on a CLEC attempting to use portions of that ILEC network and that UNE-P availability is not required to overcome these alleged burdens.

III. NETWORK ARCHITECTURES AND COMPETITION

Q. HOW DOES MR. FALCONE APPROACH HIS ARGUMENT?

A. Basically, he describes the access architectures of both an ILEC and a CLEC, and then attempts to show that the ILEC architecture is far simpler than the CLEC architecture.

Q. WHAT DO YOU MEAN BY ACCESS ARCHITECTURE?

A. By access architecture, I mean the equipment and facilities that are required to connect a Local Exchange Carrier ("LEC") end-user to that LEC's local switch.

Q. IS IT APPROPRIATE TO FOCUS EXCLUSIVELY ON ACCESS ARCHITECTURES IN ORDER TO EVALUATE THE RELATIVE COSTS OF ILEC AND CLEC NETWORKS?

A. No. Although it is true that access accounts for the great bulk of the CLEC network costs, the ILECs have significant additional network costs that must be considered in order to make a meaningful comparison.

Q. WHAT ADDITIONAL NETWORK COSTS MUST BE CONSIDERED WHEN DETERMINING THE COST OF THE ILEC NETWORK?

A. Principally the cost of the interoffice network, which consists of interoffice transmission facilities and tandem switching equipment. As I discussed in my direct testimony (Exhibit No. JHW-1T), the optimal serving arrangement for a CLEC is to use one or a small number of centrally located switches and extend the access facilities to remote central offices. This arrangement, which utilizes longer access lines than the ILECs, also features a much simpler interoffice network than the ILECs. In fact, if a single switch is used in a LATA, no CLEC interoffice network is required, and the CLEC can concentrate the traffic it exchanges with the ILEC on a single trunk group connecting to the ILEC tandem. Qwest, on the other hand, must interconnect its 80 switches in the Seattle LATA[1] and 39 in the Spokane LATA[2] with its tandem offices and with each other.

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[1] Qwest ICONN Data Central Office Find 01/26/2004, www.qwest.com/iconn

[2] Qwest ICONN Data Central Office Find 01/26/2004, www.qwest.com/iconn

Plainly, this considerable interoffice network must be considered when comparing network architectures, yet Mr. Falcone completely ignores this network and its costs.

Q. WHAT FRACTION OF THE COST OF THE ILEC NETWORK IS REPRESENTED BY THE INTEROFFICE NETWORK?

A. It is difficult to determine exactly, but according to the ARMIS reports filed with the FCC, approximately 30 percent of Qwest's direct network capital investment (in 2001) is accounted for by Central Office Transmission equipment.[3] Most of this equipment is associated with interoffice transport, although a small portion may be associated with access. The other major categories of direct network capital investment are Central Office Switching, and Cable and Wire Facilities. Most switching investment is associated with local switching, but there is substantial investment in tandem switching equipment, which is reasonably associated with the interoffice network. Similarly, most wire and cable investment is associated with the loop plant, but there is substantial cable investment in interoffice facilities. Given these tradeoffs (some central office circuit equipment associated with access, but substantial switching and cable investment associated with interoffice facilities) it is very likely that the 30 percent mentioned above understates the fraction of the ILEC investment that is associated with the interoffice network.

[3] *Statistics of Communication Common Carriers 2001*. FCC Industry Analysis Group, Table 2.8.

Q. ARE THERE PARTICULAR EXHIBITS IN MR. FALCONE'S TESTIMONY THAT MISLEAD IN THIS RESPECT?

A. Yes. Exhibit RVF-3 shows the local loop terminating on the main distribution frame ("MDF") with a broad arrow pointing to the "ILEC Switch and Network." This is all that is said about the ILEC network. Exhibits RVF-5 through RVF-8 then describe in great detail all the piece parts of the CLEC access network - the collocation configuration, the DLC equipment, the power feed, the DSX frames, and so forth. Mr. Falcone completely omits the details of Qwest's extensive interoffice network. These include large elements such as tandem switches and interoffice cables, central office equipment such as multiplexers, passive equipment such as DSX cross connect frames and fiber distribution frames, and supporting equipment such as power supplies. Some of this ILEC equipment is similar to, and much of it is more complex than, the equipment utilized by the CLEC. All of it is required if the ILEC interoffice network is to function. Unfortunately, it is nowhere to be seen in Mr. Falcone's testimony.

Q. ARE CLECS REQUIRED TO COLLOCATE AND PROVISION DLC EQUIPMENT IN EVERY CENTRAL OFFICE FROM WHICH THEY WISH TO SERVE END-USERS?

A. No. As I have explained in my direct testimony, CLECs may utilize Enhance Extended Loops ("EELs") to serve end-users where it is uneconomical to collocate.

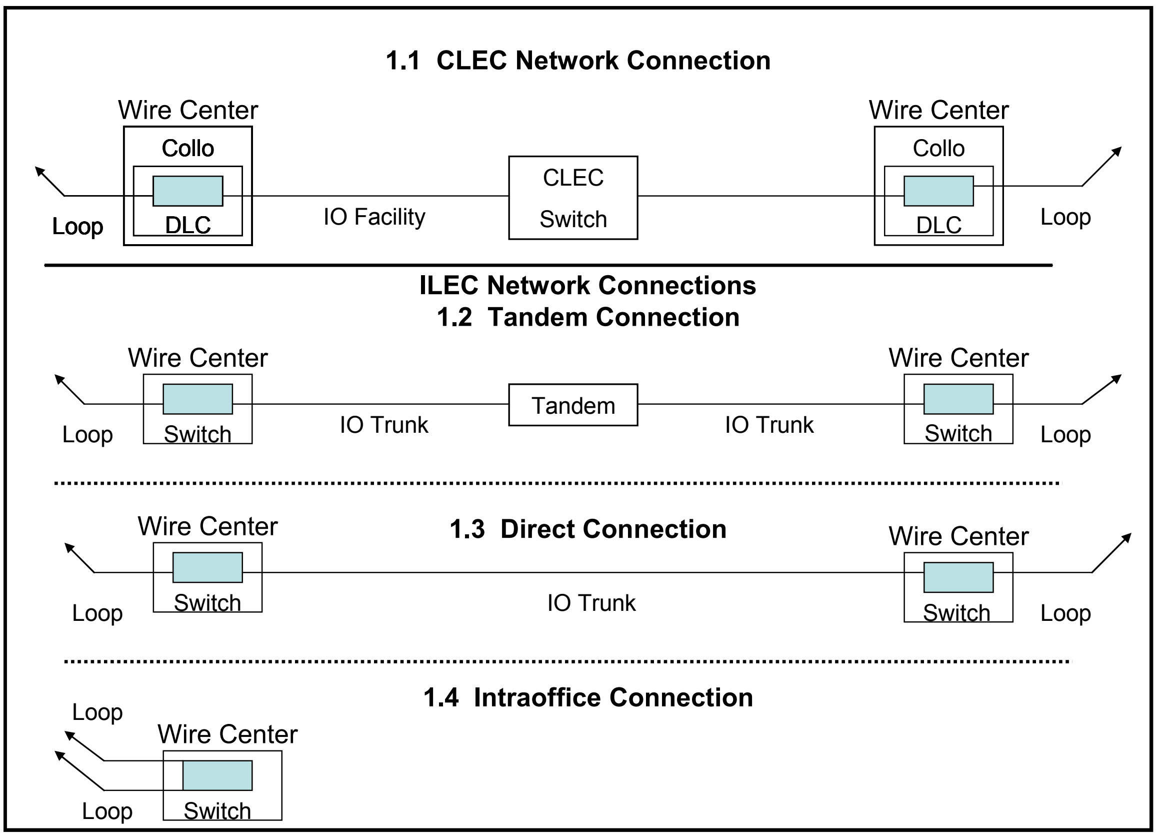
Q. ARE THERE OTHER EXHIBITS THAT ARE MISLEADING?

A. Yes. Exhibit RVF-9, although labeled "Simplified" is actually a rather complex diagram, including as it does various fiber rings as well as facility nodes, splice points, and more. There is no equivalent discussion of the ILEC network, although all these technologies are in use by Qwest as well. Exhibit RVF-10 gives great prominence to CLEC interconnection facilities, showing them as long red lines sweeping across the page, while relegating the depiction of the really complex ILEC network to a few boxes and lines. In fact, this display demonstrates the simplicity of the CLEC interoffice network - no lines interconnecting CLEC switches - a few points of presence in each local area, and a small number of connections to the Qwest network. The ILEC network, that actually comprises large numbers of switches (e.g., 80 in Seattle and 39 in Spokane, as mentioned above), is represented by only a handful of boxes on this exhibit.

Q. WHAT IS A MORE APPROPRIATE MANNER OF COMPARING THE ILEC AND CLEC NETWORKS?

A. Figure 1 below shows the major elements of both networks in an evenhanded manner. I have not included items such as power feeds, distribution frames, or DSX frames, since these are not very costly and are used in all networks for similar purposes. I focus on the significant network elements - switches, transmission facilities and, for the CLEC, DLC equipment. Mr. Falcone goes to some lengths in his testimony to distinguish between equipment that is dedicated to a particular end-user, and equipment that is shared among many end-users. He also appears to imply that only switching and transmission equipment connecting switches together are shared, but in fact DLC equipment and the transmission facilities connected to it are also shared among many end-users. The only portions of the networks shown below that are dedicated to individual end-users are the elements labeled as loops.

Figure 1—ILEC-CLEC Network Comparisons



It can be seen from Figure 1 that the local switch used by the ILECs is positioned in its network in the same manner and performs many of the same functions as the CLEC's DLC equipment. Section 1.1 of Figure 1 shows the CLEC serving arrangement. Section 1.2 shows the portions of the ILEC network that are used when an end-user's end-to-end connection requires a tandem switch. In this case, which accounts for a large fraction of

ILEC connections, the ILEC tandem switch is positioned in much the same manner and performs many of the same functions as the CLEC switch. If the connection involves end-users served by different switches with a high community of interest, there may be a direct connection between the end offices, as shown in Section 1.3 of Figure 1. Only for calls that originate and terminate in the same switch, as shown in Section 1.4 of Figure 1, is the ILEC arrangement as simple as Mr. Falcone implies.

Q. WHAT FUNCTIONALITY OF THE DLC EQUIPMENT IS EQUIVALENT TO THAT OF THE ILEC LOCAL SWITCH?

A. DLC equipment performs many of the most significant functions that are performed by the ILEC switch when it terminates an analog line, such as concentrating the traffic from the loops, and providing dial tone, ringing, answer supervision, analog to digital conversion and other functions.

Q. SIMILARLY, WHAT FUNCTIONALITY DO THE ILEC TANDEM AND THE CLEC SWITCH HAVE IN COMMON?

A. Although, it does not need to perform the line facing functions of a local switch, a tandem switch performs the essential function of routing traffic between switches, just as the CLEC local switch routes traffic between end-users. As noted in my direct testimony, AT&T has claimed equivalence between its local switches and the ILEC tandems in another proceeding.[4]

Q. MUCH OF THE TRAFFIC IN LOCAL NETWORKS WILL TRAVERSE MORE THAN ONE NETWORK. WHAT DOES THAT CONFIGURATION LOOK LIKE?

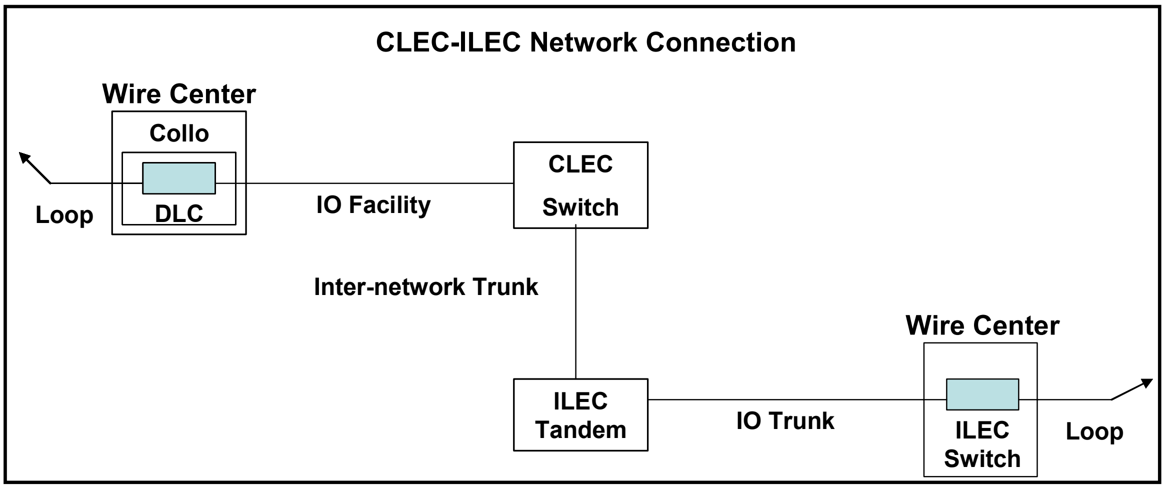
A. A connection between an ILEC end-user and a CLEC end-user is shown in Figure 2 below. It uses the CLEC access network to connect the CLEC end-user to the CLEC switch. A shared trunk facility is then utilized for connecting the CLEC switch to the ILEC tandem. The ILEC interoffice network is then used to connect the ILEC end-user to the ILEC tandem. It should be noted that this type of interconnection arrangement generally involves a tandem switch.[5] Therefore, as the CLEC traffic grows and more traffic is inter-network, the ILEC cost of providing service grows. For example, if an ILEC end-user wishes to call a neighbor who is served by the same wire center, but is receiving service from a CLEC, the connection is no longer the simple intra-office connection as shown in Section 1.4 of Figure 1, but is now the more complex arrangement shown in Figure 2. Secondly, as more end-users are served by CLECs, less ILEC traffic is carried between ILEC end-users, and hence there will be fewer direct

[4] *In the Matter of the Petition for Arbitration of AT&T Communications of the Pacific Northwest and TCG Seattle, with Qwest Corporation, Pursuant to 47 U.S.C. Section 252(b)*, Docket No. UT-033035.

[5] Under certain circumstances, the CLEC may be asked or elect to provide direct connections to ILEC end offices under the 512ccs rule.

connections between end offices. Thus, even traffic within the ILEC network will become more likely to route via a tandem, rather than utilize direct trunk groups.[6]

Figure 2—Inter-Carrier Connection



Q. ARE THE INTEROFFICE FACILITIES THE SAME IN BOTH NETWORKS?

A. They are quite similar. The technology is the same, of course, particularly if the CLECs utilize interoffice UNEs. The efficiency with which these facilities are utilized is also quite similar. The CLEC DLC equipment allows the individual loops to be concentrated so that fewer voice grade channels are required between the DLC terminal and the switch. The ILEC switches perform much the same function, requiring fewer interoffice trunks than the number of lines terminating on the switch.

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[6] Traffic engineering principles that underlie the engineering of a telecommunications network lead to the provision of direct trunks between local offices only where the traffic volumes exceed a certain level. If traffic volumes drop, it becomes more economical to concentrate the traffic on larger trunk groups that connect to a tandem, thus incurring the added cost of an extras switch in the connection.

Q. IS THE CLEC NETWORK CONFIGURATION DESCRIBED BY MR. FALCONE THE ONLY POSSIBLE ARRANGEMENT?

A. No. As pointed out in my direct testimony, CLECs can also use remote switch modules, which move much of the functionality of the switch closer to the end-user, or they may directly connect the loops to interoffice facilities through multiplexers without the need for DLC equipment or collocation. If a CLEC opts to place a remote switching module in the central office building, it can serve intra-switch module calls without traversing the CLEC's central switch. Direct connection of voice grade channels without DLC equipment or remote switch units saves collocation costs, and allows the channels to be multiplexed onto DS1 or higher speed interoffice facilities. It does not, however, allow for concentration of traffic, a function normally performed by switches or DLC equipment. It is, therefore, most appropriate in smaller offices where there are few lines.

IV. SPECIFIC ALLEGED SOURCES OF IMPAIRMENT

Q. MR. FALCONE STATES ON PAGE 4 OF HIS TESTIMONY THAT "THE ABSOLUTE COST DISADVANTAGE EXPERIENCED BY CLECS TRYING TO SERVE MASS MARKET END-USERS USING UNE-L MAKES IT IMPOSSIBLE TO COMBINE UNE LOOPS AND CLEC SWITCHES IN AN ECONOMIC MANNER." IS THIS STATEMENT TRUE?

A. No. As has been shown by Mr. Copeland, CLECs can operate profitably in six out of nine MSAs in Washington accounting for over 68 percent of the total lines in the state using this network architecture. Furthermore, Mr. Shooshan, Mr. Copeland, and Mr.

Buckley all address AT&T's "absolute cost disadvantage" argument and demonstrate its underlying fallacies.

My analysis of the information presented by Mr. Falcone shows that he presented nothing that demonstrates the existence of an absolute cost disadvantage in network designs of CLECs as compared with ILECs. As discussed above, the glaring omissions in his testimony and charts ignore significant sources of cost in the ILEC's network.

Q. MR. FALCONE STATES THAT THE NEED FOR THE CLEC TO INSTALL AND MAINTAIN A SIGNIFICANT "BACKHAUL" NETWORK INFRA-STRUCTURE IS A SIGNIFICANT DISADVANTAGE. IS THIS TRUE?

A. No. First of all, in most situations, the CLEC can, if it desires, rely on ILEC transport facilities at TELRIC prices. Secondly, as noted above, the ILEC interoffice (or "backbone") network in many cases performs the same function, with about the same efficiency, as the CLEC access (or "backhaul") network. The need to utilize such a "backhaul" network is therefore not a disadvantage for the CLEC relative to the ILEC. The ILECs, furthermore, do not have the option of leasing their networks from others at TELRIC prices. They pay real world costs to install, upgrade, maintain and operate them.

Q. MR. FALCONE ALLEGES THAT THE NEED FOR THE CLEC TO AGGREGATE TRAFFIC FROM SEVERAL LOCATIONS IS A SIGNIFICANT DISADVANTAGE. IS THIS TRUE?

A. No. Even at rather low penetration levels, the CLECs can achieve much of the benefit of aggregation within the wire centers where most of their end-users are served. This can be accomplished by the use of DLC equipment to concentrate lines as described in both Mr. Falcone's testimony on page 17 and in my direct testimony.

Q. MR. FALCONE CLAIMS THAT THE NEED TO USE THE CLEC'S TANDEM NETWORK TO COMPLETE CALLS WILL CAUSE EXCESS COSTS. IS THIS TRUE?

A. No. As far as costs are concerned, inter-carrier compensation flows both ways. Many CLECs have insisted that traffic terminating on their network be paid for as if they had a tandem switch, in which case there would be no cost if the traffic were balanced. Others have opted for a "bill and keep" arrangement, which also does not involve inter-carrier payments. Qwest includes CLEC forecasts when augmenting its network, and no construction charges for these network additions are billed to the ILECs.

Q. MR. FALCONE CLAIMS THAT THE NEED TO USE THE CLEC'S TANDEM NETWORK TO COMPLETE CALLS WILL ALSO CAUSE POTENTIAL SERVICE PROBLEMS. IS THIS TRUE?

A. No. The networks subtending the ILEC tandems are used to complete calls originated by ILEC end-users as well as those originated by CLEC end-users. The ILEC cannot, therefore, allow CLEC traffic to be degraded without impacting the service quality provided to its own end-users.

Q. MR. FALCONE STATES THAT DLC AND DSX EQUIPMENT IS "LUMPY" AND THEREFORE CANNOT BE USED EFFICIENTLY. IS THAT TRUE?

A. Certainly not at the scale at which CLECs such as AT&T are likely to operate. Mr. Falcone accurately states that Alcatel's Litespan 2000 DLC equipment has controllers that support 2,016 lines, channel units that support 224 lines, and line cards that serve four lines. CLECs with smaller scale operations have smaller DLC technologies available to them. Mr. Falcone has used one of the largest DLC models in existence to demonstrate his point. Other manufactures provide smaller increments for DLC deployment. Even Litespan 2000 DLC equipment, however, is less "lumpy" than switching equipment, which often has central control units that serve up to 100,000 lines, switch units that serve several thousand lines and line cards that serve 4 to 8 lines. Surely the four-line card cannot ever be a problem in a real-world situation. If a CLEC cannot anticipate serving four lines in an office, it should not be there. Similarly, 224 lines is a small number of lines for most CLECs, as noted by their complaints about the "hot cut" process's inability to serve thousands of lines a day. Even the 2,016 line controller should be adequately occupied in most offices if any kind of viable business is established. In any event, the cost of the controller is but a small part of the overall system cost, most of which is associated with line cards that are provided as end-users are added. DSX frames are inexpensive devices, and can be scaled to meet the need.

V. CONCLUSION

Q. DOES THE NETWORK ARCHITECTURE OF THE ILEC NETWORK MAKE IT IMPOSSIBLE FOR COMPETITION TO DEVELOP IF UNE-PS ARE NOT AVAILABLE?

A. Certainly not. The ready availability of equipment such as DLC systems and switches, interoffice transport at cost-base prices, and ample space for collocation in most ILEC wire centers makes competitive entry feasible and profitable without the need for UNE-Ps.

Q. DOES THIS CONCLUDE YOUR RESPONSIVE TESTIMONY?

A. Yes.