BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of	)	
	)	DOCKET NO. UT- 041127
THE JOINT PETITION FOR	)	
ENFORCEMENT OF	)	**AFFIDAVIT OF JEFF**
INTERCONNECTION AGREEMENTS	)	**HALTOM**
WITH VERIZON NORTHWEST, INC.	)	
(a/k/a GTE)	)	

I, Jeff Haltom, declare as follows:

1. I am an Advisory Engineer in the Network Engineering Department for MCI.

2. I hold a Bachelor of Science degree in Electrical Engineering (BSEE) from Purdue University and have more than 10 years of industry experience in Local, International, Long Distance, Voice over IP, Data, Wireless, and Packet Switching services and technologies.

3. In my position, I evaluate, recommend, and install new technologies into the MCI network.

4. The purpose of this affidavit is to provide a factual, technical description of several issues relevant to this case. First, I will explain that although Verizon has deployed a next-generation switch from Nortel's Succession family in the Mt. Vernon central office (CO), Verizon is not necessarily providing packet switching with that switch. The Succession series can be deployed with a number of different modules that support a variety of capabilities, including both packet and TDM circuit switching.

5. Second, I explain that MCI is not trying to purchase packet switching functionality, that is, directing Verizon to convert, switch or route UNE-P traffic as packets. Rather, MCI wants Verizon to continue to provide local switching for MCI's UNE-P traffic, using whatever technology Verizon chooses. I will demonstrate that, from a technical perspective, nothing has changed in MCI's UNE-P traffic – MCI's UNE-P customers continue to send the same analog POTS traffic to the Succession switch that was previously carried on Verizon's circuit switch. MCI's UNE-P customers' traffic originates and terminates as analog POTS traffic.

6. Finally, I will explain that even if Verizon has unilaterally chosen to switch MCI's UNE-P traffic as packets for any portion of the call on the trunk or transport side of the switch, such conversion is not required from

a technical standpoint. The Nortel Succession switch can be deployed to support end to end TDM circuit switching of UNE-P traffic.

VERIZON IS NOT NECESSARILY USING ITS NORTEL SUCCESSION SWITCH TO PROVIDE PACKET SWITCHING

7. Verizon states that it replaced its existing Nortel DMS-100 circuit switch with a Nortel Succession "Packet Switch" in its Mt. Vernon CO on September 10, 2004.[1] "Packet Switch" is a label that Verizon has applied; it is not the nomenclature that Nortel uses. Nortel refers to the Succession product family as a soft switch or next generation switch.

8. Verizon claims that because it has deployed the Nortel Succession switch, "unbundled circuit switching is no longer available in the affected wire centers."[2]

9. Based on my knowledge of the Nortel Succession family of switches, I believe that Verizon's claim is incorrect factually. Although Verizon has provided no technical information regarding its switch deployment, [3] I am aware that the particular switch that Verizon now says that it has installed at Mt. Vernon, can support both traditional TDM circuit switching functionality and packet switching functionality. Nortel offers an already existing module that could (or may have been) deployed by Verizon to support TDM circuit switching.[4] In fact, based on my knowledge of the Nortel Succession family, Verizon could have chosen to leave in place its existing circuit switch and deploy the Nortel Succession switch as an upgrade to add advanced service capabilities.

10. Therefore, from a technical perspective, Verizon's claim that it cannot provide unbundled packet switching is factually incorrect. It appears to me that Verizon may be using a word game to obscure technical reality. Verizon seems to be claiming that because the Nortel Succession switch is a "packet" switch, then all functionality supported on that switch (even circuit switching functionality) is classified as "packet switching" and need not be provided on an unbundled basis. The other possible

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1 Verizon Motion for Judgment on the Pleadings of, and Answer to, Joint Petition for Enforcement of Interconnection Agreements, ¶ ¶ 29,34, filed in Docket No. UT-041127, on September 27, 2004 [hereinafter cited as Verizon Motion].

2 Verion Motion, at ¶ 36.

3 Verizon initially refused even to identify the model of Nortel Succession switch that it has deployed at Mt. Vernon, claiming that such information is not relevant to the case. Verizon's Responses to MCI's First Set of Data Requests, Oct. 15, 2004, at Response 10 [hereinafter cited as Verizon's Responses] (Verizon refuses to identify the switch, instead cross referencing its response to Request 21, but that response only confirms that it is technically feasible for Verizon to provide unbundled local switching on its Nortel switch, it doesn't identify the model that was deployed). Verizon's discovery responses are provided as Attachment 1 and 2 to this affidavit. Verizon finally identified the model of the Succession switch that it deployed after it was threatened with a motion to compel. See Verizon's Supplemental Responses to MCI's Data Requests, Attachment 3.

4 See Attachment 4, Nortel Product documentation.

explanation is that even though it is technically possible to deploy the Nortel Succession switch with an already existing module that supports end-to-end TDM circuit switching, Verizon may not have chosen to do so. (This issue is described in detail below).

11. Because Verizon has not provided any technical details regarding the Nortel Succession switch at the Mt. Vernon CO, or the manner in which it was deployed, it is impossible for MCI or the Commission to verify Verizon's claim that unbundled local circuit switching is no longer available. Factual information is required to determine both whether Verizon is actually providing packet switching, and whether Verizon has or could configure its Nortel switch to support MCI's UNE-P traffic as end-to-end circuit switched TDM traffic.

MCI IS NOT DIRECTING VERIZON TO PROVIDE UNBUNDLED PACKET SWITCHING TO SUPPORT UNE-P TRAFFIC

12. MCI's Interconnection Agreement with Verizon defines local switching as "the Network Element that provides the functionality required to connect the appropriate originating lines or trunks wired to the Main Distributing Frame (MDF) or Digital Signal Cross Connect (DSX) panel to a desired terminating line or trunk. Such functionality shall include all of the features, functions, and capabilities of the Verizon switch . . . ."[5]

13. Verizon claims that MCI's Interconnection Agreement is not "technologically neutral," but Verizon is factually incorrect. MCI's Interconnection Agreement does not specify the type of technology that Verizon must use to provide local switching. From a technical perspective, it does not matter to MCI what technology Verizon may choose to use to switch and route UNE-P traffic, so long as it meets technical specifications for quality, and is transparent to MCi's end user customer. Verizon could use either circuit switching or packet switching technology.

14. In order to analyze Verizon's claims that MCI is asking for unbundled packet switching, it may be helpful to review the industry standard definitions for circuit and packet switching.

15. A circuit switched network provides a communications channel for exclusive use by connected parties until the connection is released.

16. The FCC defines packet-switched networks as those in which messages *between network users* are divided into units, commonly referred to as

[5] Interconnection, Resale and Unbundling Agreement Between GTE Northwest Incorporated and AT&T Communications of the Pacific Northwest, Inc. ("MCI Interconnection Agreement"), § 47.1 (Exhibit F-1 to the Petition for Enforcement).

packets, frames, or cells. These individual units are then routed *between network users*.[6]

17. Verizon claims that MCI is seeking unbundled packet switching, but from a technical and factual perspective, Verizon's claim is incorrect.[7] From a technical perspective, the only way that MCI could fairly be said to be asking for unbundled packet switching is if MCI were directing Verizon specifically to convert, switch or route UNE-P traffic as packets, frames or cells.

18. MCI is not directing Verizon to use packet technology to accomplish local switching. Rather, MCI wants Verizon to continue to provide local switching for MCI's UNE-P traffic, according to MCI's ICA, using whatever technology Verizon chooses.

19. From a technical perspective, nothing has changed in MCI's UNE-P customer traffic or MCI's request for local switching since the Nortel Succession switch was deployed. MCI UNE-P customers continue to send the same analog POTS traffic to the Succession switch that was previously carried on Verizon's circuit switch. MCI's UNE-P traffic originates and terminates as analog POTS traffic.

20. Both before and after Verizon deployed the Nortel Succession switch, UNE-P customers utilized and still utilize telephone equipment (*i.e.*, traditional "black phones") that receives and transmits analog voice grade POTS over analog loops between the customer premises and the Verizon CO.

21. MCI has never requested that Verizon switch its UNE-P traffic by taking the incoming analog voice grade signal and converting it to packets so that it can be switched across an IP network or packet switch's backplane. Both before and after the deployment of the Succession switch, the exact method of connecting the two endpoints of the call involved and may involve proprietary protocols across switching backplanes or conversion from one format to another (e.g., analog to digital, static to shared). A change in this 'core' transport protocol does not change the nature of the service MCI requested.

22. Both before and after the deployment of the Nortel Succession switch, MCI's UNE-P traffic came and now comes into a Verizon switch from the customer premises as analog voice grade circuits, and it is terminated to the customer premises as analog voice grade circuits. As discussed below, Verizon may or may not be routing the analog TDM circuits to packets for routing across Verizon's network. Such conversion does not constitute unbundled packet switching.

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[6] UNE Remand Order, ¶ 302 (emphasis added).

[7] Verizon Motion, at ¶ ¶ 2, 5, 6, 28, 33.

23. MCI's experience since Verizon deployed the Nortel Succession switch (in which nothing has changed from the end user experience in the entire process of sending analog voice signals from customers' traditional black phones to the Verizon switch to be terminated at a different location) confirms my belief that the new Verizon switch can support local switching functionality. See Attachment 5 for diagrams demonstrating that the customer equipment, traffic handoffs, and interconnection to MCI are exactly the same both before and after the deployment of the Nortel Succession switch.

24. Until Verizon replaced its original circuit switch with the Nortel Succession switch, the "local switching" that MCI purchased from Verizon pursuant to its Interconnection Agreement was functionality provided on a circuit switch. Verizon's response can be interpreted to confirm that the Nortel Succession switch can, and is, providing circuit switching capability, and that such functionality could technically be unbundled, but Verizon refuses to do so because it inaccurately defines all functionality supported on the Nortel Succession switch to be "packet switching."

25. From a technical perspective, MCI is seeking the exact same functionality from Verizon that Verizon provided to MCI prior to deploying its new switch and is now providing to its own customers via the Succession switch (POTS). Verizon's claim that MCI is seeking unbundled packet switching is not true. MCI is attempting to have Verizon continue to provide switching functionality for the same analog voice signals that MCI has always been ordering from Verizon. MCI could fairly be said to be seeking unbundled packet switching only if its customers were handing off digital, packetized bit streams over its customer loops to the Verizon CO and asking Verizon to switch those packets or if MCI customers were handing off analog voice signals and directing Verizon to convert the signal to packets for switching through Verizon's network. However, MCI is not doing, and has not done, any of these things.

26. Even if Verizon is actually carrying MCI's UNE-P traffic as packets for some portion of the call, such an approach would be entirely Verizon's decision. Of course, Verizon has not stated whether or not it is operating in this manner.

27. Verizon is using the Nortel Succession switch in exactly the same manner as MCI desires – it is switching of incoming analog POTS signals from customers and terminating those same signals as analog POTS transmissions at the other end of the call.

28. Verizon confirmed in its discovery responses that it is providing "plain old telephone service" (POTS) to its retail customers using the Nortel

Succession "Packet Switch".[8] The FCC defines POTS as "ordinary switched voice service," and as "analog" service.[9] The definition the FCC uses is the commonly accepted industry definition of POTS.

29. In response to MCI's data requests, Verizon also confirmed that initially it is offering its retail customers only POTS services, and is not offering any "IP-enabled services."[10] Thus, Verizon admits it is not using the Nortel Succession switch to provide users direct access to Voice over Internet Protocol ("VOIP"), or any other advanced service, that is, any service other than POTS." Further, based on my knowledge of the telecommunications industry, it is unlikely that Verizon will ever phase out POTS service completely, even if numerous customers convert to VOIP or advanced services in the future.

30. In addition, Verizon admits that it deployed its Nortel Succession switch "incrementally," meaning that the switch will initially be used to provide voice service and later the switch could be used to provide "IP-enabled services."[11]

31. Further, Verizon confirmed that its retail POTS customers will not need to make any changes to their existing telephone equipment to utilize the Nortel Succession "Packet Switch".[12] To the best of my knowledge, Verizon POTS customers use traditional "black phones," (i.e., telephone equipment that receives and transmits analog voice grade signals over analog loops between the customer premises and the Verizon CO).

32. Thus, Verizon itself is using the Nortel Succession switch to provide circuit switching functionality for analog POTS calls (i.e. the origination and termination of calls as analog TDM traffic). The only way Verizon appears to use packet functionality, if at all, is for the limited use of routing traffic to another Succession switch in Verizon's network, or to a trunk gateway. If the call goes to a user served from a circuit switch or to another TDM hand-off then the packet conversion for some portion of the call is an incidental, non-necessary step that Verizon unilaterally chooses to do. Such conversion does not define the nature of the service for Verizon's retail customers – it is transparent to them, just as it is for MCI's UNE-P customers. There is no net conversion.

33. Verizon stated that the reason it chose to deploy the Nortel Succession switch at Mt. Vernon is that the existing circuit switch was nearing exhaust.[13] Thus, Verizon apparently turned to the Succession switch to

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8 Attachment 1 at Response 4.
9 Triennial Review Order, ¶ ¶ 127, 197 n. 624, 459 .
10 Attachment 1, at Response 5.
11 *Id.*
12 Attachment 1, at Response 9.
13 Verizon Motion at ¶ 29.

increase capacity, and possibly to improve switch efficiency. Such switch exchange should be viewed no differently than other steps ILECs such as Verizon have taken to increase capacity on their networks through the use of traditional or new technology.

34. Indeed, based on my knowledge of the Nortel Succession family, Verizon could have deployed the Nortel Succession switch as an upgrade to its existing circuit switch instead of replacing it. The Nortel Succession switch is specifically designed to allow a carrier to protect its existing investment in circuit switching. From a technical perspective, upgrading an existing circuit switch with the Nortel Succession upgrade cannot be said to have transformed the existing switch into a packet switch. Rather, the existing switch would merely have hybrid circuit and packet switching capabilities.

THE NORTEL SUCCESSION SWITCH COULD BE DEPLOYED BY VERIZON TO SUPPORT END-TO-END TDM CIRCUIT SWITCHING

35. As discussed above, the Nortel Succession Switch can support both traditional circuit switching and packet switching functionality.

36. Also as discussed above, the Nortel Succession switch accepts an analog voice signal from MCI's UNE-P customers and delivers the same analog voice signal to another user at the termination point. Because Verizon has not provided ANY technical details regarding its switch deployment, it is not possible to know whether Verizon carries the analog UNE-P POTS signal as circuit switched TDM traffic on and end-to-end basis, or whether for some portion of the call, Verizon is unilaterally choosing to convert the analog signal to packets for switching either across the backplane of the switch, or across an IP transport network.

37. Based on my independent knowledge of the Nortel Succession switch, it is possible to deploy the switch in a hybrid manner such that the switch can support both end-to-end circuit switched TDM traffic, and TDM to packet to TDM conversions. MCI has significant experience with the Nortel Succession family of switches, and has tested and deployed the Nortel Succession switch in a hybrid mode that supports both TDM circuit switched traffic and packet switched traffic.

38. In order to support end-to-end circuit switched TDM traffic (i.e., with no conversion to packets at any point during the call), Verizon would need only to deploy an already existing module that contains a call routing matrix for TDM circuits. In a hybrid mode, the Nortel Succession switch would have both this circuit switching call matrix and a packet switching call matrix. Communication between the two 'planes' of the switch would be done via an Interworking Gateway. This Interworking Gateway is an already existing option for the Nortel Succession switch and is

widely used as an evolution path for existing DMS platforms to the Succession architecture.

39. If deployed in a hybrid manner, TDM circuits may be switched to other TDM circuits without ever converting the signal to packets on the backplane of the switch or routing it as packets across Verizon's IP network.

40. If MCI's UNE-P traffic is switched using the TDM switch matrix, it remains as circuit switched TDM traffic throughout the entire call. For this reason, Verizon cannot legitimately argue that MCI's UNE-P traffic is packet switched.

41. MCI is not necessarily advocating that Verizon adopt any particular switch technology or deployment approach. Pursuant to its ICA, MCI is asking that Verizon be required to continue to provide local switching for UNE-P traffic through whatever technology Verizon deems most appropriate.

42. In summary, it appears to me from a technical perspective that there are at least three ways that Verizon can continue to provide unbundled local switching to MCI for UNE-P traffic. First, Verizon could continue to operate a circuit switch with the Nortel Succession switch deployed either as a parallel node, or as an upgrade to the circuit switch. Second, Verizon could provide unbundled local switching for analog UNE-P traffic on its Nortel switch whether or not a portion of the call might be converted to packets. Third, if Verizon insists that it will support unbundled local switching only for TDM circuit switched traffic, then Verizon could utilize the already existing module discussed above to handle UNE-P traffic as circuit switched TDM traffic for the entirety of the call.

43. Verizon may find one of these options discussed above preferable to the others based on its own internal considerations. However, it is clear from a technical perspective, that any of the three options would be a technically feasible way for Verizon to provide unbundled local switching as required by MCI's Interconnection Agreement.

VERIFICATION

The facts stated in this affidavit are true and correct to the best of my knowledge and belief.

Executed on this 27th day of October, 2004.

Jeff Haltom