

required.¹³⁰ Furthermore, to the greatest extent possible, the KPMG test was both independent and blind.¹³¹ Although it was virtually impossible for the KPMG transactions to be truly blind, KPMG instituted certain procedures to ensure that both KPMG and Hewlett Packard would not receive preferential treatment.¹³² For example, KPMG required that all documents provided to them were generally available to all competing carriers.¹³³

46. The persuasiveness of a third-party review depends upon the conditions and scope of the review.¹³⁴ The scope and depth of KPMG's review, and the conditions surrounding it, including KPMG's independence, military-style test philosophy, efforts to place itself in the position of an actual market entrant, and efforts to maintain blindness when possible, lead us to treat the conclusions in the KPMG Final Report as persuasive evidence of Verizon's OSS readiness.

47. *PricewaterhouseCoopers Review.* After filing its initial application, but before refiling, Verizon engaged PricewaterhouseCoopers ("PwC") to review certain aspects of its performance metrics data and OSS to supplement the KPMG review. Among other things, PwC: (1) replicated certain DSL performance metrics for Massachusetts and certain line sharing metrics for Massachusetts and New York to assess whether Verizon calculates measures according to the prescribed business rules;¹³⁵ and (2) reviewed the processes, systems, and procedures used for line sharing by Verizon in Massachusetts to assess whether they are comparable to those used in New York.¹³⁶

48. We conclude that Verizon, through the PwC review and other aspects of its application, provides sufficient evidence that the line sharing OSS in New York are relevant and should be considered in our evaluation of Verizon's Massachusetts OSS. This showing thus enables us to rely, for limited purposes, on New York performance data as an indication of Verizon's line sharing OSS readiness in Massachusetts in addition to the limited Massachusetts specific performance evidence in Verizon's Massachusetts carrier-to-carrier reports. We find

¹³⁰ *See id.*

¹³¹ *See id.* at 9.

¹³² For example, blindness was impossible because transactions arrive on dedicated circuits, the owners of which are known by Verizon. *Id.*

¹³³ *Id.*

¹³⁴ *Ameritech Michigan Order*, 12 FCC Rcd at 20659.

¹³⁵ *See infra* Part IV.B.2.a.

¹³⁶ *See Verizon Massachusetts II Application App. A, Vol. 2, Joint Supp. Declaration of Russell J. Sapienza and Gerard J. Mulcahy, Tab 2 at 3-4, para. 9 (Verizon Massachusetts II Sapienza/Mulcahy Decl.).* PwC also assessed whether Verizon's separate data affiliate, Verizon Advanced Data, Inc. ("VADI") used the same interfaces as non-affiliates and whether Verizon treats VADI transactions the same as non-affiliate transactions and reviewed the accuracy and consistency of several Verizon studies of the Massachusetts DSL performance data. *Id.* We note in the relevant discussions below the extent to which we rely on these findings.

that this showing is adequate, in these circumstances, because we are merely considering it as evidence to supplement the limited commercial line sharing performance available in Massachusetts. We also note that our finding rests in part on the fact that no party asserts that the New York and Massachusetts line sharing OSS are different or that we should not consider Verizon's New York line sharing performance in this application.¹³⁷ Indeed, at least one commenter concedes the comparability issue.¹³⁸

49. The record indicates that Verizon's line sharing OSS in New York and Massachusetts use the same systems and offer the same functionality.¹³⁹ PwC's review included a step-by-step "walkthrough" of 957 OSS transactions. PwC tracked both New York and Massachusetts transactions forward from the competing carrier interfaces to Verizon's service order processor to determine if the process is the same in both states. PwC also sampled pending service orders in the Service Order Processor and traced their history back to Verizon's front-end systems. PwC supplemented the walkthroughs by examining programming code, reviewing documentation related to systems architecture and process flow, and interviewing Verizon employees.¹⁴⁰ PwC concluded, based upon its review, that there are "no significant differences in the systems and processes used to provide ordering, provisioning, or maintenance and repair of line sharing in New York and Massachusetts." In addition to PwC's review, the record indicates that Verizon's Massachusetts OSS for pre-ordering functions does not distinguish queries related to line sharing from those for stand alone xDSL-capable loops.¹⁴¹ As we conclude below, Verizon has shown that its pre-ordering OSS for xDSL-capable loops is adequate.¹⁴² Accordingly, we shall consider Verizon's commercial line sharing performance in New York as a supplement to Verizon's limited commercial line sharing performance in Massachusetts.

c. Pre-Ordering

50. Based on the evidence in the record, we conclude that Verizon demonstrates that it provides nondiscriminatory access to its OSS pre-ordering functions. Specifically, we find that

¹³⁷ We cannot say, however, that we would find similar evidence persuasive proof that OSS from one state is relevant in our consideration of another state's OSS if such evidence were challenged or were not merely intended to supplement actual, though limited, commercial evidence in the primary state (as we have here).

¹³⁸ See Covad Massachusetts II Comments at 20.

¹³⁹ Verizon Massachusetts II Sapienza/Mulcahy Decl. at 6-26, paras. 14-48.

¹⁴⁰ PwC did note two exceptions to its overall conclusion. First, a Verizon operations center processes line sharing orders for VADI's New York operations but not other competitive LECs or VADI's Massachusetts operations. PwC did find, however, that the operations center uses the same methods and procedures as the operations center that processes other line sharing orders. Second, one "code module" in the New York Service Order Processor did not exist in the Massachusetts Service Order Processor. Verizon explained that the code module was inactive and had been renamed for archiving, and immediately deleted it.

¹⁴¹ See Verizon Massachusetts II Application App. A, Vol. 1, Declaration of Paul A. Lacouture and Virginia P. Ruesterholz at 12, para. 27 (Verizon Massachusetts II Lacouture/Ruesterholz Decl.).

¹⁴² See *infra* Parts IV.A.2.c(ii) & IV.B.2.c.

Verizon demonstrates that: (i) Verizon's pre-ordering systems allow competing carriers to successfully build and use application-to-application interfaces to perform pre-ordering functions, allow competitors to integrate pre-ordering and ordering interfaces, provide reasonably prompt response times, and are consistently available in a manner that affords competitors a meaningful opportunity to compete; and (ii) Verizon offers nondiscriminatory access to OSS pre-ordering functions associated with determining whether a loop is capable of supporting xDSL advanced technologies.

51. The pre-ordering phase of OSS generally includes those activities that a carrier undertakes to gather and verify the information necessary to place an order.¹⁴³ Most of the pre-ordering activities undertaken by a competing carrier to order resale services and UNEs from the incumbent are analogous to the activities a BOC must accomplish to furnish service to its own customers. For example, in this proceeding and in accordance with the *UNE Remand Order*, we require Verizon to provide competing carriers with access at the pre-ordering stage to the same detailed information Verizon makes available to itself concerning loop make-up information so that competitors may make fully informed judgments about whether to provision xDSL service to end users.¹⁴⁴ In prior orders, the Commission has emphasized that providing pre-ordering functionality through an application-to-application interface is essential in enabling carriers to conduct real-time processing and to integrate pre-ordering and ordering functions in the same manner as the BOC.¹⁴⁵

(i) Pre-Ordering Functionality, Integration, Response Times and Availability

52. Verizon's pre-ordering systems allow competing carriers to successfully build and use application-to-application interfaces to perform pre-ordering functions, allow competitors to integrate pre-ordering and ordering interfaces, provide reasonably prompt response times, and are consistently available in a manner that affords competitors a meaningful opportunity to compete. Verizon offers requesting carriers in Massachusetts access to an EDI application-to-application

¹⁴³ See *SWBT Texas Order*, 15 FCC Rcd at 18426, para. 148; *Bell Atlantic New York Order*, 15 FCC Rcd at 4014, para. 129. In prior orders, the Commission has identified the following five pre-order functions: (1) customer service record (CSR) information; (2) address validation; (3) telephone number information; (4) due date information; (5) services and feature information. See *id.*, 15 FCC Rcd at 4015, para. 132. In addition, the Commission determined in the *UNE Remand Order* "that the pre-ordering function includes access to loop qualification information." See *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, CC Docket No. 96-98, Third Report and Order, 15 FCC Rcd 3696, 3885, para. 426 (*UNE Remand Order*).

¹⁴⁴ As the Commission has explained in prior orders, because characteristics of a loop, such as its length and the presence of various impediments to digital transmission, can hinder certain advanced services technologies, carriers often seek to "pre-qualify" a loop by accessing basic loop make-up information that will assist carriers in ascertaining whether the loop, either with or without the removal of the impediments, can support a particular advanced service. See *Bell Atlantic New York Order*, 15 FCC Rcd at 4021, para. 140.

¹⁴⁵ *SWBT Texas Order*, 15 FCC Rcd at 18426, para. 148; *Bell Atlantic New York Order*, 15 FCC Rcd at 4014, para. 130; *Second BellSouth Louisiana Order*, 13 FCC Rcd at 20661-67, para. 105.

interface.¹⁴⁶ We find that the EDI interface allows competing carriers to perform the same full range of pre-ordering functions for both resale services and UNEs that Verizon provides to itself.¹⁴⁷ We note that no commenter alleges that Verizon fails or refuses to offer any of these specific pre-ordering functions. Verizon also demonstrates that competing carriers can successfully build and use application-to-application interfaces. We base our conclusion on the ability of the third-party tester to construct and extensively test the EDI interface for pre-ordering functions.¹⁴⁸ KPMG successfully conducted a functional evaluation and volume and stress tests of the EDI interface, which confirm Verizon's ability to provide the requisite pre-ordering functionality.¹⁴⁹ We also find that Verizon has shown that it allows competing carriers to integrate successfully pre-ordering information into Verizon's ordering interface and the carriers' back office systems.¹⁵⁰ As part of its functional evaluation of the EDI interface, KPMG used pre-order response information to populate subsequent service requests. KPMG found that the pre-order and order field names and formats were compatible, allowing carriers to integrate pre-ordering and ordering interfaces and integrate pre-ordering information into their back office systems.¹⁵¹ In addition, although we do not rely on Verizon's common object request broker architecture interface (CORBA) in reaching our conclusion, we take note that Verizon provides competing carriers with this additional application-to-application interface for pre-order functions.¹⁵²

53. Verizon demonstrates that it provides access to pre-ordering functionality in a manner that allows an efficient competitor a meaningful opportunity to compete. The Commission has held previously that an interface that provides responses in a prompt timeframe and is stable and reliable is necessary for competing carriers to market their services and serve

¹⁴⁶ See Verizon Massachusetts I Application App. A, Vol. 2, Declaration of Kathleen McLean and Raymond Wierzbicki at 9-10, para. 21 (Verizon Massachusetts I McLean/Wierzbicki Decl.).

¹⁴⁷ See Verizon Massachusetts I McLean/Wierzbicki Decl. at para. 18. See also *SWBT Texas Order*, 15 FCC Rcd at 18427, para. 149; *Bell Atlantic New York Order*, 15 FCC Rcd at 4014, para. 130.

¹⁴⁸ See *infra* Part IV.A.2.h(i).

¹⁴⁹ See KPMG Final Report at 15-69 (providing the results of the LSOG 2 EDI functional evaluation and volume performance test). Specifically, KPMG concluded that Verizon's OSS provided the pre-order functionality Verizon is required to provide (Test POP-1-2-2). KPMG also concluded that Verizon's pre-order systems provided clear, accurate and complete responses and error messages (POP-1-6-1, POP-1-6-2).

¹⁵⁰ See Verizon Massachusetts I McLean/Wierzbicki Decl. at para. 27.

¹⁵¹ See KPMG Final Report at 60 (Test POP-1-7-1). Although KPMG found an inconsistency in the manner Verizon returned one field of directory listing information, this inconsistency appears to have had minimal competitive impact; KPMG concluded that the pre-order response information returned in this field adequately fulfilled order form input requirements. See *id.* Of course, to the extent Verizon becomes aware of any inconsistencies in field names or formats that would impede a carrier's ability to integrate pre-ordering and ordering functions, we expect that Verizon promptly will design and deploy a software correction or provide the necessary technical assistance to competing carriers in the interface integration. See *Bell Atlantic New York Order*, 15 FCC Rcd at 4021, para. 139.

¹⁵² See Verizon Massachusetts I McLean/Wierzbicki Decl. at para. 25.

their customers as efficiently and at the same level of quality as Verizon serves its own customers.¹⁵³ Verizon's performance data demonstrate that Verizon's EDI interface has met or exceeded the relevant benchmarks for interface response time and availability in each of the last four months, with only a few scattered exceptions of negligible competitive impact.¹⁵⁴ KPMG's functional and volume tests of Verizon's LSOG 2 EDI pre-order interface provide additional confirmation of Verizon's satisfactory performance with respect to the availability and response times of its pre-order functionality.¹⁵⁵ We therefore conclude that Verizon's interfaces are available in a stable and consistent manner and afford an efficient competitor a meaningful opportunity to compete.

(ii) Access to Loop Qualification Information

54. *Background.* As the Commission required of SWBT in the recent *SWBT Kansas/Oklahoma Order*,¹⁵⁶ we require Verizon to demonstrate that it provides access to loop qualification information in a manner consistent with the requirements of the *UNE Remand Order*.¹⁵⁷ In particular, we require Verizon to provide access to loop qualification information as part of the pre-ordering functionality of OSS. In the *UNE Remand Order*, the Commission required incumbent carriers to provide competitors with access to all of the same detailed

¹⁵³ See *Bell Atlantic New York Order*, 15 FCC Rcd at 4025, para. 145, and 4029, para. 154.

¹⁵⁴ See Verizon Carrier-to-Carrier Performance Standards and Reports, September 2000 – December 2000. The PO 1 series of metrics measures the response times of Verizon's OSS in performing a number of pre-order transactions. Verizon's EDI performance under this series of metrics met or exceeded the applicable benchmark in all four months, with the following exception. In October 2000, Verizon's average response time to reject EDI pre-order queries was 0.68 seconds longer than the applicable benchmark (PO 1-07). We do not deem this delay in response time of less than one second in one month's performance to be competitively significant. The PO 2 series of metrics measures the availability of Verizon's OSS interfaces. While Verizon may not have met the benchmark standard of 100 percent, 24 hour availability for some of the PO 2 metrics measuring EDI pre-order interface availability from September through December 2000, Verizon's performance data under these metrics show no lower than 99.88 percent availability of its EDI interface during this four-month period. We do not consider the 0.12 percent unavailability of Verizon's interface to be competitively significant.

¹⁵⁵ See KPMG Final Report at 47-55. Specifically, KPMG concluded that LSOG 2 EDI pre-order interface capability was consistently available during 100 percent of scheduled hours of operation (Test POP-1-1-1). KPMG found that, following system and documentation enhancements, 98 percent of pre-order transactions submitted as part of its functional test received responses (POP-1-2-1). For its volume test, 99.9 percent of pre-order transactions received responses (POP-1-3-1). For pre-order transactions for which Verizon retail analogue data were available, average response times for transactions submitted by KPMG as part of its functional evaluation met the associated carrier-to-carrier benchmarks, with the exception of pre-order product and service availability (PSA) transactions. However, 95 percent of KPMG's total PSA transactions during its functional evaluation and 99 percent of such transactions during its volume test received responses within 10 seconds (POP-1-4-2, POP-1-4-3, POP-1-5-2). See also KPMG Final Report at 69 (Table 1-18) (volume evaluation of LSOG 2 EDI pre-order response timeliness).

¹⁵⁶ SWBT's section 271 application for Kansas and Oklahoma was the first such application reviewed for its compliance with the *UNE Remand Order* requirements for nondiscriminatory access to loop qualification information. See *SWBT Kansas/Oklahoma Order* at paras. 121-29.

¹⁵⁷ See *UNE Remand Order*, 15 FCC Rcd at 3885-87, paras. 427-31.

information about the loop available to themselves, and in the same time frame as any of their personnel could obtain it, so that a requesting carrier could make an independent judgment at the pre-ordering stage about whether a requested end user loop is capable of supporting the advanced services equipment the requesting carrier intends to install. Under the *UNE Remand Order*, Verizon must provide carriers with the same underlying information that it has in any of its own databases or internal records.¹⁵⁸ The relevant inquiry as required by the *UNE Remand Order* is not whether Verizon's retail arm or advanced services affiliate has access to such underlying information but whether such information exists anywhere in Verizon's back office and can be accessed by any of Verizon's personnel.¹⁵⁹ Moreover, Verizon may not "filter or digest" the underlying information and may not provide only information that is useful in the provision of a particular type of xDSL that Verizon offers.¹⁶⁰ Verizon must provide loop qualification information based, for example, on an individual address or zip code of the end users in a particular wire center, NXX code or on any other basis that Verizon provides such information to itself. Verizon must also provide access for competing carriers to the loop qualifying information that Verizon can itself access manually or electronically. Finally, Verizon must provide access to loop qualification information to competitors "within the same time frame that any incumbent personnel are able to obtain such information," including any personnel in its advanced services affiliate, Verizon Advanced Data, Inc. (VADI).¹⁶¹

55. Currently, Verizon provides four ways for competing carriers to obtain loop make-up information: (1) mechanized loop qualification based on information in its LiveWire database; (2) access to loop make-up information in its Loop Facility Assignment and Control System (LFACS) database; (3) manual loop qualification; and (4) engineering record requests. As we discuss in more detail below, competitors can request loop make-up information from the LFACS and LiveWire databases, or can request that Verizon perform a manual search of its paper records to determine whether a loop is capable of supporting advanced technologies.¹⁶²

56. Verizon's mechanized loop qualification database, known as LiveWire, provides real-time access on a pre-order basis to the loop qualification information VADI's retail

¹⁵⁸ See *id.* at 3885, para. 427. For example, to the extent Verizon personnel may access any such information, Verizon must provide competitors with information regarding: (1) the composition of the loop material, including both fiber and copper; (2) the existence, location and type of any electronic or other equipment on the loop, including but not limited to, digital loop carrier or other remote concentration devices, feeder/distribution interfaces, bridge taps, load coils, pair-gain devices, disturbers in the same or adjacent binder groups; (3) the loop length, including the length and location of each type of transmission media; (4) the wire gauge(s) of the loop; and (5) the electrical parameters of the loop, which may determine the suitability of the loop for various technologies. See *id.*

¹⁵⁹ See *id.* at 3886, para. 430.

¹⁶⁰ See *id.* at 3886, para. 428. For example, an incumbent LEC may not provide a "green, yellow, or red" indicator of whether a loop qualifies for its particular xDSL offering in lieu of underlying loop make-up information in its possession. See *id.*; see also *infra* at para. 67.

¹⁶¹ See *UNE Remand Order*, 15 FCC Rcd at 3885-87, paras. 427-31.

¹⁶² See *SWBT Kansas/Oklahoma Order* at para. 122.

personnel use to qualify an end-user customer's line for VADI's ADSL service.¹⁶³ Competing carriers are able to access the LiveWire mechanized database via the Web GUI, CORBA and EDI interfaces. Verizon states that LiveWire provides information on whether a loop is qualified for ADSL service, the length of the loop and, if the loop does not qualify for ADSL service, data on why the loop does not qualify (e.g., presence of Digital Loop Carrier, T-1 in the binder group, or load coils).¹⁶⁴ The information contained in the LiveWire database is "theoretical" or "sampled" loop information, i.e., information about a test sample of loops in a given distribution terminal that is attributed to the rest of the loops in the same terminal.¹⁶⁵ According to Verizon, as of July 2000, the mechanized database included information about loops in 93 percent of Verizon's central offices in Massachusetts with collocation arrangements in place, which covered 98 percent of the access lines in Massachusetts with collocation.¹⁶⁶

57. Competing carriers are also able to use an interim pre-order process to access any loop make-up information stored in Verizon's LFACS database.¹⁶⁷ The loop make-up information contained in LFACS includes actual, loop-specific information.¹⁶⁸ Within 24 hours of a competitive carrier querying LFACS for loop make-up information, Verizon returns all of the LFACS information on the loop in the remarks field of the pre-order interface used to make

¹⁶³ See Verizon Massachusetts I Application App. A, Vol. 1, Declaration of Paul A. Lacouture and Virginia P. Ruesterholz at para. 108 (Verizon Massachusetts I Lacouture/Ruesterholz Decl.). See also Verizon Massachusetts I McLean/Wierzbicki Decl. at para. 20.

¹⁶⁴ See Verizon Massachusetts I Lacouture/Ruesterholz Decl. at para. 108.

¹⁶⁵ See Letter from Dolores May, Executive Director Federal Regulatory, Verizon, to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 00-176 (filed November 3, 2000) (Verizon November 3 *Ex Parte* Letter). Verizon tested a minimum of 10 pairs per hundred pairs in a terminal, or a fraction of 100 pairs if less than a 100 pairs were in the terminal tested. See *id.*

¹⁶⁶ See Verizon Massachusetts I Lacouture/Ruesterholz Decl. at para. 108. As an alternative to mechanized loop qualification through the LiveWire database, Verizon states that it also provides competitors with access to a server containing files indicating the working telephone numbers in end offices that have been qualified for Verizon's retail ADSL product. Verizon states that it plans to add loop length information to the files in February 2001. See Verizon Massachusetts II Lacouture/Ruesterholz Decl. at para. 33.

¹⁶⁷ According to Verizon, LFACS contains loop make-up information for about 10 percent of Verizon's Massachusetts terminal locations. See Verizon Massachusetts I Reply at 37. Verizon has not provided specific information about the terminals for which LFACS does contain information. Thus, to the extent those terminals serve a greater number of loops (for example, terminals in densely populated urban areas), the 10 percent of terminals for which Verizon has stated LFACS contains loop make-up information could actually reflect a significantly higher proportion of Verizon's loops in Massachusetts than 10 percent. See Verizon November 3 *Ex Parte* Letter (indicating that terminals vary greatly in the number of loops they serve).

¹⁶⁸ LFACS contains loop-specific information including: segment length by gauge; bridge tap location; bridge tap length; loop composition (e.g., copper or fiber); existence of digital single subscriber carrier; the existence, spacing, type and quantity of load coils; and the presence of DLC. See Letter from Dolores May, Executive Director Federal Regulatory, Verizon, to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-9, Attach. D, at 6 (filed February 2, 2001) (Verizon February 2 *Ex Parte* Letter).

the query.¹⁶⁹ In addition, through its change management process, Verizon has begun implementing a permanent process for providing this information in real-time and in electronically parsed form through its LSOG 4 and LSOG 5 pre-order interfaces, with availability expected by October 2001.¹⁷⁰

58. Verizon also provides a manual loop qualification process. According to Verizon, this manual process provides competing carriers with the same types of information ordinarily available through the mechanized loop qualification process.¹⁷¹ To conduct a manual loop qualification, Verizon's Loop Qualification Center (LQC) first examines information from the LiveWire and LFACS databases, and performs a mechanized line test (MLT) on the loop to verify the actual loop length.¹⁷² If this information is inconclusive, engineers in Verizon's Facilities Management Center examine paper records to determine the loop length, whether or not the loop is qualified and, if it is not, the reasons why.¹⁷³ Unlike loop qualification through the "real time" LiveWire mechanized database, which is designed to return loop qualification information within seconds when queried, the manual qualification process has a standard completion interval of three business days between submission of a request for manual loop qualification and the return of the requested loop information to the competing carrier.¹⁷⁴

¹⁶⁹ See Verizon February 2 *Ex Parte* Letter at 3-4. Verizon provides evidence that it is consistently meeting its target of returning LFACS loop make-up information within 24 hours. See Verizon Massachusetts II Reply, App. A, Tab 1, Attach. C (showing 100 percent of LFACS queries receiving responses within 24 hours for February 2001). As described below, requesting carriers generally receive LFACS loop information within 2 hours of submitting a request. See *infra* at para. 61, n.183.

¹⁷⁰ See Verizon February 2 *Ex Parte* Letter at 8. Verizon's change management proposal for this new transaction treats it as a "Type 2" or regulatory change. See Verizon Massachusetts II Application at 14-15.

¹⁷¹ See Verizon Massachusetts I Lacouture/Ruesterholz Decl. at para. 109. See also Letter from Dolores May, Executive Director Federal Regulatory, Verizon, to Eric Einhorn, Common Carrier Bureau, Federal Communications Commission, CC Docket No. 00-176 at 2 (filed October 17, 2000) (Verizon October 17 *Ex Parte* Letter).

¹⁷² The loop lengths returned by the MLT in the manual qualification process correspond to the actual metallic loop lengths of discrete cable pairs to end users, as opposed to the theoretical loop lengths returned by LiveWire. Loop lengths in LiveWire are based on binder group sampling, for which Verizon has conducted MLT tests on a sample of loops serving a given distribution terminal. See Verizon November 3 *Ex Parte* Letter. See also Letter from Jason Oxman, Senior Government Affairs Counsel, Covad Communications Company, to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 00-176 at 7, n.11 (filed October 26, 2000) (Covad October 26 *Ex Parte* Letter).

¹⁷³ See Verizon October 17 *Ex Parte* Letter at 3-4 (describing Verizon's manual loop qualification process). This paper records search performed as part of the manual loop qualification process yields a more limited set of loop information than the engineering query discussed below. See *infra* n.174 and para. 59.

¹⁷⁴ See Verizon Massachusetts I Lacouture/Ruesterholz Decl. at para. 109. See also Verizon Massachusetts I Application App. A, Vol. 3, Declaration of Elaine M. Guerard and Julie A. Canny at para. 78 (Verizon Massachusetts I Guerard/Canny Decl.). If the manual process indicates a loop is qualified for the requested service, Verizon provides loop-specific information about the length of the line based on MLT, the presence of load coils or bridge tap, and the presence of T-1 in the binder group. If the loop is not qualified, Verizon returns a "query" notice (continued....)

Currently, competing carriers request manual loop qualification as part of the OSS ordering function by ordering an xDSL loop and indicating in the Local Service Request (LSR) order form that a manual qualification is required. Verizon has begun implementing access to manual loop qualification as a pre-order function. Detailed specifics for this pre-order transaction are being addressed in Verizon's change management process, with complete implementation expected in October 2001.¹⁷⁵

59. Finally, Verizon, through an engineering record request, provides additional types of loop make-up information not returned through the mechanized and manual loop qualification processes. Verizon indicates that competitors may request this engineering query on a pre-order basis.¹⁷⁶ To conduct this engineering query, Verizon's Facilities Management Center conducts a search of loop inventory and paper records. The additional information provided through an engineering query includes the exact locations of load coils, the exact locations and lengths of bridge taps, as well as actual cable gauges and the length of each gauge.¹⁷⁷ According to Verizon, this information is more detailed than the information returned in response to a manual loop qualification request.¹⁷⁸ Furthermore, the engineering query provides loop make-up information for loops not in the LFACS database.¹⁷⁹ The engineering query carries a standard interval of 72 hours for performing the engineering record review.¹⁸⁰ These queries appear to be seldom requested; Verizon performed only 15 engineering queries in Massachusetts between January and June 2000, whereas it performed approximately 11,700 manual loop qualifications in the same period.¹⁸¹

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indicating why the loop is not qualified for the requested service. *See* Verizon October 17 *Ex Parte* Letter at 3-4 (describing Verizon's manual loop qualification process).

¹⁷⁵ *See* Verizon February 2 *Ex Parte* Letter at 4-8. Verizon's change management proposal for this new transaction treats it as a "Type 2" or regulatory change. *See* Verizon Massachusetts II Application at 14-15.

¹⁷⁶ Verizon indicates that, using a manually submitted form, competitors may conduct engineering record requests on a pre-order basis. *See* Letter from Dee May, Executive Director Federal Regulatory, Verizon, to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-9 (filed March 16, 2001); *see also* "Engineering Query Process Description," at http://128.11.40.241/east/wholesale/html/pdfs/engineering_queryrequest.pdf.

¹⁷⁷ *See* Verizon Massachusetts I Lacouture/Ruesterholz Decl. at para. 110. *See also* Verizon October 17 *Ex Parte* Letter at 4.

¹⁷⁸ *See* Verizon October 17 *Ex Parte* Letter at 4.

¹⁷⁹ *See supra* n.167.

¹⁸⁰ *See* Massachusetts Department Massachusetts I Comments at 293.

¹⁸¹ *See* Verizon Massachusetts I Application App. B., Vol. 34a-b, Tab 443 at 657 (Verizon response to DTE-WCOM-4-11 information request). One commenter indicates that the engineering query is seldom requested due to its high cost, at \$123 per query. *See* Rhythms Massachusetts I Reply App. A, Declaration of Robert Williams at para. 13 (Rhythms Massachusetts I Williams Reply Decl.).

60. *Discussion.* Based on this evidence, we conclude that Verizon demonstrates that it offers nondiscriminatory access to OSS pre-ordering functions associated with determining whether a loop is capable of supporting xDSL advanced technologies. We reject commenters' various assertions that Verizon's loop make-up information processes do not comply with its *UNE Remand* obligations. These complaints fall into three categories. First, Covad complains that deficiencies in the interim LFACS process render Verizon's loop information processes noncompliant with the checklist. Second, Rhythms and Covad complain that Verizon's manual loop qualification process is not part of the pre-ordering stage, contrary to the requirements of the *UNE Remand Order*. Finally, several commenters advance various other complaints that deficiencies in Verizon's loop information processes warrant a finding of noncompliance. For the reasons discussed below, we reject these claims.

61. *Interim LFACS Process.* We conclude, contrary to Covad's assertions, that Verizon's offering for LFACS loop make-up information complies with the checklist. Our conclusion is based on both the nature of Verizon's interim process for access to LFACS information coupled with its work in the formal change management process implementing enhanced permanent loop qualification processes.¹⁸² In addition, we are encouraged by Verizon's current plans to develop a permanent fix for loop qualification OSS by October 2001. With respect to the nature of the interim process, we find that Verizon is currently providing useful, detailed information to competing carriers concerning the ability of loops to support xDSL services and is doing so in reasonable time frames. Specifically, although Verizon states that it will return all queries for loop qualification information within 24 hours of receiving a request, in actuality, competitors are generally receiving this information within 2 hours.¹⁸³ Moreover, we find it significant that Verizon's interim loop qualification process is largely automated. For example, competitors are able to submit their loop information queries and receive responses to these queries through Verizon's electronic pre-order interfaces.¹⁸⁴

62. With respect to Verizon's work in the change management process, we find that Verizon has begun actively implementing enhancements to its loop qualification processes under a proposal that is detailed, well-developed, and subject to a prioritized time frame.¹⁸⁵ Extensive software development is required of both Verizon and competing carriers to implement Verizon's change management proposals for LFACS access. Importantly, we find that Verizon has initiated concrete and irreversible steps to implement these changes through its formal change management process. This is not a case, for example, where only a skeletal plan is being submitted to change management. Verizon's proposals provide competitors with comprehensive

¹⁸² We note, for future applications, that not all interim processes and change management proposals may be sufficient to warrant a finding of checklist compliance.

¹⁸³ See Letter from Dee May, Executive Director Federal Regulatory, Verizon, to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-9 (filed April 3, 2001).

¹⁸⁴ See Verizon February 2 *Ex Parte* Letter at 3.

¹⁸⁵ Verizon states that these system enhancements will be complete by October 2001. See Verizon February 2 *Ex Parte* Letter at 8.

detail about the business rules and field format requirements of its new loop information processes. Implementation of these processes at a minimum requires extensive software development in Verizon's interface systems (Web GUI, EDI and CORBA), the Request Manager gateway system, the underlying systems (LFACS, LiveWire), and the data exchange between these systems.¹⁸⁶ Moreover, we recognize that change management is an appropriate and important step in implementing systems enhancements where, as here, such enhancements may substantially impact competing carriers' OSS.¹⁸⁷ In reaching our conclusion, we rely on the nature of Verizon's formal change management process in Massachusetts, which provides for substantial competing carrier input and participation and for oversight by the Massachusetts Department.¹⁸⁸ We also rely on the fact that Verizon has introduced its proposals as regulatory changes, subject to the prioritized implementation process for regulatory requirements.¹⁸⁹ Finally, we note that Verizon has established October 2001 as the expected completion date for its system enhancements.¹⁹⁰

63. Under these circumstances, we reject Covad's claim that checklist compliance is not met until the completion of the change management process.¹⁹¹ To find such would perversely incent competing carriers to delay implementation of improved OSS and BOCs to circumvent the change management process. Given these specific circumstances, we find that Verizon's processes for access to LFACS comply with the checklist. Verizon has an interim process for LFACS access in place, and is actively using the change management process in implementing a proposal that is detailed, well-developed, subject to a prioritized time frame and firm completion date, and carries substantial implications for competitors' OSS.

¹⁸⁶ See Verizon February 2 *Ex Parte* Letter at 5.

¹⁸⁷ As the Commission has previously recognized, "[c]ompeting carriers need information about and specifications for an incumbent's systems and interfaces in order to develop and modify their systems and procedures to access the incumbent's OSS functions." See *Bell Atlantic New York Order*, 15 FCC Rcd at 3999, para. 102. For competing carriers to successfully interface with and make use of Verizon's new loop information processes, they will need to conduct extensive development with respect to their own systems and interfaces. See Verizon February 2 *Ex Parte* Letter at 5. The Commission has recognized that the existence of an adequate change management process and evidence that the BOC has adhered to this process over time demonstrates that the BOC is adequately assisting competing carriers to use available OSS functions. See *Bell Atlantic New York Order*, 15 FCC Rcd at 4000, para. 102. As discussed below, we find Verizon's change management processes in Massachusetts to be satisfactory. See *infra* Part IV.A.2.h.

¹⁸⁸ See *infra* Part IV.A.2.h(i).

¹⁸⁹ See Verizon Massachusetts II Application at 14-15; see also Verizon Massachusetts I McLean/Wierzbicki Decl., Attach. S at 18, 36-39, 71-77 (timeline, process flow, and description of regulatory change process).

¹⁹⁰ We note that, while our analysis of Verizon's compliance relies in part on the enhancements discussed in Verizon's application, this Order does not address whether Verizon was in compliance with the requirements of the *UNE Remand Order* prior to adopting its interim process for access to LFACS and implementing additional enhancements through its change management process.

¹⁹¹ See Covad Massachusetts II Reply at 27.

64. We also reject Covad's other arguments that Verizon's LFACS process fails to satisfy its *UNE Remand* obligations for the following reasons. Covad objects that competing carriers must wait 24 hours to receive LFACS loop make-up information under the interim process, whereas Verizon's personnel are able to access this information electronically "in an instant."¹⁹² As already explained, however, requesting carriers generally receive LFACS information through the interim process within 2 hours.¹⁹³ Covad also objects that the interim process does not provide loop information in electronically parsed form, to allow for integration between pre-ordering and ordering interfaces.¹⁹⁴ Verizon's interim process does, however, allow competitors to submit queries for and obtain LFACS loop information through Verizon's electronic pre-order interfaces.¹⁹⁵ Furthermore, with respect to both of these objections to the interim process, our finding of checklist compliance does not rely on Verizon's interim processes alone. Rather, as explained above, our conclusion rests on the nature of Verizon's interim processes for access to LFACS coupled with its work in change management enhancing this process. The permanent process for LFACS access will provide the functionality and features Covad seeks.¹⁹⁶ Until this permanent system enhancement is in place, Verizon has provided competing carriers with an adequate process for obtaining LFACS loop information quickly and electronically. Finally, Covad objects that Verizon does not return working telephone number or serving address information with the LFACS information it returns, making it more difficult for competitors to associate the information with a particular loop.¹⁹⁷ We find, however, that requesting carriers are able to associate LFACS loop information with working telephone numbers or serving area addresses, contrary to Covad's assertions.¹⁹⁸

65. *Manual Loop Qualification.* We also reject Rhythms' and Covad's complaints that Verizon has so far failed to develop a pre-ordering interface for manual loop qualification.¹⁹⁹ We find that this is insufficient to render Verizon's loop information offering to competitors

¹⁹² See Covad Massachusetts II Comments at 33.

¹⁹³ See *supra* at para. 61, n.183.

¹⁹⁴ See Covad Massachusetts II Comments at 33.

¹⁹⁵ See Verizon February 2 *Ex Parte* Letter at 3.

¹⁹⁶ See *supra* at paras. 60-63; see also Verizon February 2 *Ex Parte* Letter at 4-5 and Attach. D. Verizon states that these system enhancements will be complete by October 2001, a schedule to which we expect Verizon to adhere. See Verizon February 2 *Ex Parte* Letter at 8.

¹⁹⁷ See Covad Massachusetts II Reply at 27.

¹⁹⁸ Verizon states that, if a competitive carrier's representative uses the end user's telephone number to identify the loop for which information is being sought, the LFACS loop information returned will be associated with that telephone number on that representative's "work list." Verizon also states that, if the representative uses the end user's address to identify the loop, Verizon will include that address along with the LFACS loop make-up information returned in the "remarks" field of the pre-order interface. See Letter from Dee May, Executive Director Federal Regulatory, Verizon, to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-9 (filed April 4, 2001).

¹⁹⁹ See Rhythms Massachusetts I Comments at 33-34; Covad Massachusetts I Reply at 10.

noncompliant with the requirements of the *UNE Remand Order*. For the most part, the information returned through the manual loop qualification process is already provided to competitors through other loop qualification processes that are available at the pre-ordering stage.²⁰⁰ The only information returned through manual loop qualification not otherwise available at the pre-ordering stage is the result of a loop-specific MLT test.²⁰¹ MLT information is merely a small subset of the information returned through the manual loop qualification process. We find that, given the totality of the circumstances, the inability of competitors to access this subset of information on a pre-order basis is not fatal to Verizon's application. Moreover, we rely on Verizon's work in the change management process to implement pre-order access to manual loop qualification, including MLT test results, through its LSOG 4 and LSOG 5 pre-order interfaces.²⁰²

66. *Other Arguments.* Finally, commenters make various other claims alleging that Verizon's provision of loop make-up information is discriminatory and violates the requirements of the *UNE Remand Order*, which we reject for the following reasons. For example, ALTS and Covad claim that Verizon's mechanized loop make-up information database -- LiveWire -- fails to meet *UNE Remand* requirements because it sometimes contains inaccurate and incomplete information, hampering competing carriers' ability to order xDSL loops.²⁰³ As we noted above, the LiveWire database Verizon makes available to competing carriers is the same database used by Verizon's retail affiliate to qualify loops.²⁰⁴ Thus, any inaccuracies or omissions in Verizon's LiveWire database are not discriminatory, because they are provided in the exact same form to both Verizon's affiliate and competing carriers.²⁰⁵

67. We also reject Covad's assertion that Verizon's inclusion of information in its LiveWire database regarding whether a loop qualifies for VADI's retail ADSL service violates

²⁰⁰ See *supra* at para. 58. For example, competitors currently have pre-order access to loop information stored in the LiveWire and LFACS databases, separate and apart from information from those databases returned through the manual loop qualification process. See *supra* at paras. 56-57. Competitors may also obtain pre-order access to loop information in Verizon's paper records through an engineering query. See *supra* at para. 59.

²⁰¹ See *supra* at para. 58 & n.172.

²⁰² See *supra* at para. 58. See also Verizon February 2 *Ex Parte* Letter at 4-5, and Attach. D.

²⁰³ See ALTS Massachusetts I Comments at 27-28; ALTS Massachusetts II Comments at 18-19; Covad Massachusetts II Reply at 27-28.

²⁰⁴ See *supra* n.163.

²⁰⁵ The Commission came to the same conclusion regarding similar allegations of inaccuracies in SWBT's loop make-up information database, which was also used both by retail personnel in SWBT's separate data affiliate and competitors. See *SWBT Kansas/Oklahoma Order* at para. 126. We note that a change to LiveWire is currently in change management. When this change is implemented, LiveWire will indicate when it does not contain loop qualification data for a particular service address or telephone number, and indicate that a manual loop qualification should be requested. Verizon states that this change will follow the change management timeline for a June 2001 release. See Verizon Massachusetts II Lacouture/Ruesterholz Reply Decl. at para. 22.

the *UNE Remand Order*.²⁰⁶ Covad contends that Verizon's use of this information denies competing carriers access to more detailed loop information and does not allow carriers to identify the physical attributes of the loop to make a more informed judgment about the possibility of offering service. We reject this contention because we find that this information is provided to competitors *in addition* to the other loop make-up information required by the *UNE Remand Order*, and not *instead of* required information. Verizon's designation of whether or not a loop qualifies for VADI's retail ADSL service is a summary of the loop make-up information contained in LiveWire and an alternative way to provide help in determining whether the loop is adequate for providing advanced services.²⁰⁷ It does not replace the loop make-up information contained in LiveWire that is also returned with each query. In addition to the loop make-up information contained in LiveWire, competing carriers can also access actual loop make-up information from Verizon's LFACS database to the extent it is available and, upon request, Verizon will perform an engineering search of its paper records to determine the actual make-up of the loop. We therefore find that Verizon's designation of whether a loop qualifies for VADI's retail ADSL service merely supplements the other loop make-up information Verizon provides.

68. Moreover, we reject ALTS' argument that Verizon's current loop qualification processes, including its interim process for allowing competitors access to LFACS, fail to satisfy *UNE Remand* obligations because portions of these processes are manual rather than electronic. Specifically, ALTS asserts that "the only truly competitive way for [competing carriers] to receive [loop information] is electronically."²⁰⁸ The Commission specifically rejected such an assertion in the *UNE Remand Order*. That order makes clear that, to the extent an incumbent has not compiled loop information for itself, it is not required to "conduct a plant inventory and construct a database on behalf of requesting carriers." Instead, the incumbent is obligated to provide requesting competitors with nondiscriminatory access to loop information within the same time frame whether it is accessed manually or electronically.²⁰⁹

69. We also reject Sprint's contention that Verizon fails to meet its obligations under the *UNE Remand Order* because it fails to provide unfiltered access to information about its digital loop carrier (DLC) facilities. Specifically, Sprint contends that Verizon only offers information about DLC on a line-by-line basis, rather than also on the basis of "zip code of the end users in a particular wire center, NXX code, or on any other basis that the incumbent provides such information to itself," as stated in the *UNE Remand Order*.²¹⁰ The *UNE Remand Order*, however, does not require that Verizon provide loop information on the basis of zip code and NXX code if none of Verizon's personnel are able to access loop information on those bases. Rather, the *UNE Remand Order* sets forth a standard of nondiscrimination, requiring incumbents

²⁰⁶ See Covad Massachusetts I Reply at 9-10.

²⁰⁷ See Verizon Massachusetts I Lacouture/Ruesterholz Decl. at para. 108.

²⁰⁸ See ALTS Massachusetts II Comments at 18.

²⁰⁹ See *UNE Remand Order*, 15 FCC Rcd at 3886, para. 429.

²¹⁰ See Sprint Massachusetts II Comments at 5 (citing *UNE Remand Order*, 15 FCC Rcd at 3885, para. 427).

to provide loop information on any basis that any incumbent personnel may obtain that information.²¹¹ Verizon indicates that, through both its interim and long-term LFACS access processes, it will provide: (1) an indication that DLC equipment is present on the facility for which loop make-up has been requested; and (2) the type of DLC equipment present.²¹² The record does not contain any evidence that DLC information is available to any Verizon personnel in any form other than on a line-by-line basis, nor is there information on the record that any Verizon personnel have access to DLC information beyond the information returned through an LFACS query. Without more than Sprint's allegations to the contrary, we decline to find that Verizon fails to provide competitors with nondiscriminatory access to its loop information systems, including information about DLC facilities.

d. Ordering

70. In this section, we address Verizon's ability to provide competing carriers with access to the OSS functions necessary for placing wholesale orders. We find that Verizon demonstrates -- with performance data, the results of its third-party test, and other evidence -- that it provides competing carriers with access to OSS ordering functions in a manner that allows these carriers a meaningful opportunity to compete or in the same time and manner as it provides those functions to its retail operations. First, in subparts (i) through (iv), we address those same elements of ordering as have been probative in past section 271 orders:²¹³ confirmation notices, rejection notices, flow-through, completion notices, and jeopardy information. Then in subpart (v) we address commenters' concerns that Verizon's ordering OSS is susceptible to the same problems that led to a Consent Decree between Verizon (then Bell Atlantic) and the Commission after the company's section 271 application was approved in New York.

(i) Order Confirmation Notices

71. Using the same analysis and looking to similar performance measurements as in prior orders, we find that Verizon provides order confirmation notices in a manner that affords competitors a meaningful opportunity to compete.²¹⁴ Data indicate that for orders that flow through²¹⁵ its systems without manual handling, Verizon consistently exceeds the Massachusetts

²¹¹ See *UNE Remand Order*, 15 FCC Rcd at 3885, para. 427.

²¹² See Letter from Dee May, Verizon, to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-9 (filed February 26, 2001) (Verizon February 26 *Ex Parte* Letter).

²¹³ See *SWBT Kansas/Oklahoma Order* at para. 135; *Bell Atlantic New York Order*, 15 FCC Rcd at 4035, para. 163.

²¹⁴ See *SWBT Texas Order*, 15 FCC Rcd at 18438-40, paras. 171-73; *Bell Atlantic New York Order*, 15 FCC Rcd at 4035-37, para. 164, 4047-48, para. 180.

²¹⁵ See *infra* Part IV.A.2.d(iii) (discussing order flow-through in detail).

Department's benchmark of returning 95 percent of confirmation notices within two hours.²¹⁶ For orders that require some amount of manual processing (*e.g.*, complex orders, orders for nine or more loops), Verizon generally exceeds the Massachusetts Department's benchmark, with scattered exceptions relating to resale two-wire digital services, resale special services of ten or more lines, and UNE DS-1 and DS-3 orders. The disparities for two-wire digital services and resale special services were minimal.²¹⁷ Although the disparities for UNE DS-1 and DS-3 order confirmations were more significant,²¹⁸ confirmations for these orders made up less than one percent of all confirmations from September through December.²¹⁹ Absent evidence of discrimination or competitive harm, we find that this disparity has little competitive impact in light of the small number of those orders. We also find that Verizon's confirmation notices accurately reflect competing carriers' orders.²²⁰

72. Our conclusion that Verizon's performance is acceptable is further supported by the results of KPMG's examination of Verizon's order confirmation process and performance. KPMG found that Verizon timely returns confirmations for flow-through orders and non-flow-through orders upwards of 96 percent of the time.²²¹ The Massachusetts Department likewise concluded that Verizon provides timely confirmation notices.²²²

²¹⁶ For orders that flow through, Verizon returned such notices 96.56 to 99.89 percent of the time in the period from September through December 2000. *See* OR 1-02 (percent on time local service request confirmation, flow-through).

²¹⁷ For resale orders for two-wire digital services, Verizon returned 94.64, 92.30, 94.87, and 92.11 percent of confirmation notices within 72 hours for September through December respectively. This performance is just under the benchmark and does not appear to be consistently deteriorating. *See* OR 1-04 (percent on time local service request confirmation < 10 lines, no flow-through). For resale orders for special services of ten or more lines, Verizon returned confirmations on time 88.88 percent of the time in September, increasing through December when Verizon returned confirmations on time 100 percent of the time. *See* OR 1-06 (percent on time local service request confirmation, no flow-through, electronically submitted).

²¹⁸ For UNE DS-1 and DS-3 orders of less than ten lines, Verizon fell well below the benchmark from September through December, achieving no more than a 50 percent on time rate. *See* OR 1-04 (percent on time local service request confirmation < 10 lines, no flow-through). For further discussion of Verizon's performance with regard to DS-1s and DS-3s, *see infra* Parts IV.B & V.C.

²¹⁹ *See* total confirmations as calculated from Verizon September through December Performance Data.

²²⁰ Each month, Verizon examines a sample of confirmation notices from manually processed orders for accuracy. In every month from September through December, Verizon exceeded the Massachusetts Department's benchmark of 95 percent error-free confirmations, with the exception of November when 94.05 percent and December when 92.75 percent of the sample of manually processed UNE-L orders was error-free. We find this disparity to be isolated and slight. *See* OR 6-03 (percent accuracy). We do not address WorldCom's complaints regarding July data for order accuracy because more recent data show acceptable performance. *See* WorldCom Massachusetts I Kwapniewski/Lichtenberg Decl. at para. 28.

²²¹ *See* KPMG Final Report at 50-51 (Test POP-1-4-4 and -1-4-5 (EDI)), 102 (Test POP-2-4-1 and -2-4-2 (GUI)).

²²² *See* Massachusetts Department Massachusetts I Comments at 147.

73. We reject commenters' arguments that Verizon fails to provide confirmation notices adequately. ASCENT (on behalf of its members) and OnSite assert without support that they experience problems with confirmation timeliness and accuracy.²²³ We decline to find that these vague assertions overcome Verizon's specific evidence showing that it provides confirmation notices in a manner that affords competing carriers a meaningful opportunity to compete.²²⁴

(ii) Order Rejection Notices and Order Rejections

74. We agree with the Massachusetts Department that Verizon provides competing carriers with order rejection notices in a manner that allows them a meaningful opportunity to compete.²²⁵ Verizon's performance data demonstrate that it returns order rejection notices in a timely manner over both EDI and the web GUI. From September through December, Verizon returned rejection notices for orders that flow through its system within two hours more than 97 percent of the time.²²⁶ In the same period, for orders that require some manual processing, Verizon returns rejection notices within the number of hours required for each particular service, with minor exceptions.²²⁷ Furthermore, KPMG found that Verizon timely and appropriately returns rejection messages.²²⁸ Absent any clear evidence of discrimination or competitive harm, we find that this performance demonstrates compliance with our requirements.

75. We recognize, however, that on average for all carriers combined, Verizon rejects a substantial number of orders. From September through December, Verizon rejected approximately 43 to 49 percent of resale orders and 21 to 25 percent of UNE orders.²²⁹ The Commission does not, however, hold a BOC accountable for rejects that occur for reasons within

²²³ See ASCENT Massachusetts I Comments at 10; OnSite Massachusetts I Comments at 8, 18; ASCENT Massachusetts II Comments at 20.

²²⁴ We decline to address commenters' assertions about data from before September 2000 when later data are available. See, e.g., Winstar Massachusetts I Comments at 22.

²²⁵ See Massachusetts Department Massachusetts I Comments at 147.

²²⁶ See OR 2-02 (Percent On Time LSR Reject, Flow-Through).

²²⁷ See OR 2-04 (Percent On Time LSR Reject < 10 Lines); OR 2-06 (Percent On Time LSR Reject >= 10 Lines). The exceptions were isolated and slight. In September, Verizon returned rejections for resale POTS and prequalified complex orders on time 94.73 percent of the time. See OR 2-04. Also, Verizon returned rejections for UNE special services orders on time 91.37 percent of the time in November and 93.62 percent of the time in December. See OR 2-04. Finally, for UNE orders of less than 10 lines that were faxed in (rather than submitted electronically), Verizon returned rejections on time in October 79.55 percent of the time, in November 90.63 percent of the time, and in December 92.31 percent of the time. See OR 2-08 (percent on time LSR reject < 10 lines). This performance is steadily improving and in recent months has been only slightly below the 95 percent benchmark. We do not address comments based on March through July data because more recent data are available. See, e.g., WorldCom Massachusetts I Kwapniewski/Lichtenberg Decl. at para. 28.

²²⁸ See KPMG Final Report at 52-53 (Tests POP-1-4-6 & POP-1-4-7 (EDI)), 105 (Test POP-2-6-5 (GUI)).

²²⁹ See OR 3-01 (Percent Orders Rejected).

a competing carrier's control. As in the *SWBT Kansas/Oklahoma Order*, *SWBT Texas Order*, and *Bell Atlantic New York Order*,²³⁰ rejections in this instance vary widely by individual competing carrier: among carriers submitting the most orders in May, June, or July, rejection rates varied from about 5 to 83 percent.²³¹ Because all competing carriers interface with the same Verizon system, we find, on this record, that it would not be appropriate to attribute this wide range of results entirely to Verizon. The Massachusetts Department likewise determined that "the efforts put forth by the [competing carriers] in submitting accurate [local service requests] are very strongly tied to the overall order reject rates reported by VZ-MA."²³² In light of this variation, we conclude that the overall reject rates experienced by competing carriers in this instance do not indicate flaws in Verizon's OSS.

76. Two commenters, OnSite and ASCENT (on behalf of its members), allege that they have problems receiving timely rejection notices.²³³ Their assertions are not supported, however, by any specific evidence. Absent such evidence, these assertions are insufficient to rebut Verizon's evidence of compliance with this checklist item. We also disagree with Rhythms' assertion that Verizon's rejection performance does not satisfy our standards for section 271 approval because Verizon was rejecting its orders for "defective characters" and has not performed a root cause analysis on this problem.²³⁴ We are not able to conclude based on the evidence that Rhythms provides that this is a problem with Verizon's OSS and not Rhythms'. Finally, ALTS points to a KPMG observation regarding inappropriate rejections of ISDN resale orders.²³⁵ This observation was successfully closed, and in the absence of further evidence we believe the issue is resolved.²³⁶

(iii) Order Flow-Through Rate

77. We agree with the Massachusetts Department that Verizon's OSS are capable of flowing through orders in a manner that affords competing carriers a meaningful opportunity to compete.²³⁷ In recent section 271 orders, the Commission has examined flow-through rates²³⁸

²³⁰ See *SWBT Kansas/Oklahoma Order* at para. 143; *SWBT Texas Order*, 15 FCC Rcd at 18442, para. 176; *Bell Atlantic New York Order*, 15 FCC Rcd at 4045, para. 175, 4050, para. 183.

²³¹ See Verizon Massachusetts I McLean/Wierzbicki Decl. Attach. I.

²³² Massachusetts Department Massachusetts I Comments at 113.

²³³ See ASCENT Massachusetts I Comments at 10; OnSite Massachusetts I Comments at 8; ASCENT Massachusetts II Comments at 20. WorldCom points to commercial data from March through June 2000; we do not generally address commenters' claims regarding old data when more recent data are available.

²³⁴ Rhythms Massachusetts I Comments at 22.

²³⁵ See ALTS Massachusetts I Comments at 23.

²³⁶ See Massachusetts Department Massachusetts I Reply at 22.

²³⁷ See Massachusetts Department Massachusetts I Comments at 107 (finding that "VZ-MA's systems are quite capable of allowing [competing carriers] and resellers to attain high levels of order flow-through and of sustaining future commercial volumes"), 147-48.

largely for their potential to indicate problems elsewhere in a BOC's OSS. In particular, low flow-through rates, combined with other independent record evidence, can be indicators of: (1) failure to provision orders in a timely manner; (2) failure to provide competing carriers with complete, up-to-date business rules and ordering codes; (3) lack of integration between pre-ordering and ordering functions; (4) failure to provide order status notices electronically; and (5) inability to process competing carriers' orders at reasonably foreseeable commercial volumes in a nondiscriminatory manner.²³⁹ Flow-through rates, therefore, are not so much an end in themselves, but a tool used to indicate a wide range of possible deficiencies in a BOC's OSS that may deny an efficient competitor a meaningful opportunity to compete in the local market. As discussed elsewhere in this Order, these specific deficiencies are not present here.²⁴⁰ As a result, we use flow-through here not as a "conclusive measure of nondiscriminatory access to ordering functions,"²⁴¹ but as one indicium among many of the performance of Verizon's OSS.

78. Although Verizon's commercial data show low *average* total flow-through rates -- ranging from about 46 to 49 percent for resale orders and 51 to 55 percent for UNE orders from September through December²⁴² -- we conclude, as the Massachusetts Department did,²⁴³ that Verizon's OSS is *capable* of flowing through competing carriers' orders in substantially the same time and manner as Verizon's own orders. Some competing carriers are achieving much higher flow-through rates than others. Data regarding resale orders show that carriers that placed the most orders in July 2000 had total flow-through rates for resale orders varying from 0 to 90.09 percent; data regarding UNE-P orders similarly show that carriers that placed the most orders in July 2000 had total flow-through rates for such orders varying from 66.10 to 70.59 percent.²⁴⁴ Because all competing carriers interface with the same Verizon system, we find, on this record, that it would not be appropriate to attribute this wide range of results entirely to Verizon. The Commission has consistently stated that a BOC is not accountable for orders that fail to flow through due to competing carrier-caused errors.²⁴⁵ Moreover, our conclusion that Verizon's systems are capable of achieving high overall levels of order flow-through is

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²³⁸ Competing carriers' orders "flow through" if they are submitted electronically and pass through Verizon's ordering OSS into its back office systems without manual intervention.

²³⁹ See *Bell Atlantic New York Order*, 15 FCC Rcd at 4034, para. 162; *Second BellSouth Louisiana Order*, 13 FCC Rcd at 20671, para. 108.

²⁴⁰ See *infra* Part IV.A.2.e (provisioning); *infra* Part IV.A.2.h(i) (documentation); *supra* Part IV.A.2.c (integration); *supra* Parts IV.A.2.d(i), IV.A.2.d(ii), and *infra* Part IV.A.2.d(iv) (ordering notifiers); *infra* para. 81 (scalability).

²⁴¹ *Bell Atlantic New York Order*, 15 FCC Rcd at 4034, para. 161.

²⁴² See OR 5-01 (Percent Flow-Through Total).

²⁴³ See *supra* n.237.

²⁴⁴ See Verizon Massachusetts I McLean/Wierzbicki Decl. Attach. H.

²⁴⁵ See *Bell Atlantic New York Order*, 15 FCC Rcd at 4039-40, para. 167, 4049, para. 181; *Second BellSouth Louisiana Order*, 13 FCC Rcd at 20674, para. 111.

reinforced by KPMG's testing. When KPMG submitted test orders, it achieved a flow-through rate of 100 percent for both resale and UNE-L orders that are designed to flow through Verizon's systems.²⁴⁶ We expect that Verizon's flow-through rates will improve over time as individual carriers gain experience with the OSS and as Verizon conducts monthly workshops for competing carriers to help them improve their order submissions.²⁴⁷

79. We disagree with commenters that we should reject Verizon's application based on its average flow-through rates or because some kinds of orders are not designed to flow through.²⁴⁸ Specifically, WorldCom first argues that Verizon's flow-through rates are too low. It points out that Verizon's Massachusetts rates are below the rates in New York at the time of section 271 approval there, and it argues that Verizon should be reporting on achieved flow-through, as it does in New York. WorldCom also disagrees that Verizon should be permitted to rely on UNE-P flow-through rates to show that competing carrier orders can flow through.²⁴⁹ Second, WorldCom argues that KPMG's test revealed problems with Verizon's flow-through in Massachusetts. It points out that KPMG's commercial test shows a less than 60 percent achieved flow-through rate and that four orders that flowed through for Verizon did not flow through in the wholesale environment.

80. As we explain above, Verizon has shown that its OSS is *capable* of flowing competing carrier orders through. The commercial data, particularly the individual carrier reports, demonstrate that some carriers are capable of achieving high flow-through rates. Verizon's showing that some carriers achieve high UNE-P flow-through rates is not its sole showing that its OSS can flow through orders, but is incremental evidence that some carriers are

²⁴⁶ See KPMG Final Report at 123-24 (Tests POP-3-1, POP-3-2, POP-3-3) (results after correcting Verizon's documentation). In its "commercial flow-through test," KPMG examined a sample of the New York and Massachusetts orders of two competing carriers to determine the rate of flow-through for flow-through eligible orders (achieved flow-through) and the overall rate of flow-through (total flow-through) for those carriers over a two week period. See *id.* at 116 & n.70. Achieved flow-through was 59 percent and total flow-through was 35 percent. See *id.* at 126. KPMG discounted the results of this test, because its "primary assessment methodology" was the testing of KPMG orders described in the text above. *Id.* The Massachusetts Department also discounted the results of KPMG's commercial test, particularly because the test examined orders placed in New York as well as Massachusetts, and at a time when Verizon was addressing order processing errors in New York. See Massachusetts Department Massachusetts I Comments at 143. Without knowing whether the two carriers KPMG selected for its commercial test were representative of competing carriers in general, and for the reasons stated by the Massachusetts Department, we are not persuaded that the results of KPMG's commercial test show discrimination.

²⁴⁷ See Verizon Massachusetts I McLean/Wierzbicki Decl. at para. 53. We also note that the Massachusetts Department has added a special provision on flow-through to the Massachusetts PAP. See *infra* n.257.

²⁴⁸ See ASCENT Massachusetts I Comments at 11; OnSite Massachusetts I Comments at 18; Rhythms Massachusetts I Comments at 22-23; Winstar Massachusetts I Comments at 16, 21; ASCENT Massachusetts II Comments at 21. We do not address commenters' claims regarding data from early 2000 when more recent data are available.

²⁴⁹ WorldCom Massachusetts I Comments at 47, 52; WorldCom Massachusetts I Kwapniewski/Lichtenberg Decl. at paras. 155-64; WorldCom Massachusetts I Kinard Decl. at para. 8; WorldCom Massachusetts I Reply at 39; WorldCom Massachusetts I Kwapniewski/Lichtenberg Reply Decl. at paras. 23-24.

achieving high flow-through. We do not specifically need Verizon's achieved flow-through figures in order to determine that Verizon's OSS are capable of offering high flow-through. The commercial data are the most probative evidence that Verizon provides nondiscriminatory access to its OSS. KPMG's functionality test, which showed good flow-through, supports our determination. While its commercial test does not, KPMG itself discounted its commercial test, and the Massachusetts Department concurred that the commercial test was not as probative as the functionality test. Finally, the Massachusetts Department has added a special provision on flow-through to the Performance Assurance Plan (PAP); Verizon must report there both achieved and total flow-through.²⁵⁰ This addition will provide a substantial disincentive to discriminate against competing carriers with regard to flow-through.

81. We also agree with the Massachusetts Department that Verizon is timely and accurately processing orders that do not flow through,²⁵¹ and that Verizon's ordering systems are sufficiently scalable to handle reasonably foreseeable commercial volumes of orders in a nondiscriminatory manner.²⁵² Verizon has been able to maintain or improve upon its performance while order volumes have generally increased.²⁵³ KPMG also concluded that Verizon's systems are scalable.²⁵⁴

82. Some commenters have expressed concern that low levels of flow-through, the commensurate higher levels of manual processing, or other inadequacies limit the scalability of Verizon's OSS.²⁵⁵ In particular, the Department of Justice expressed concern in its first evaluation that Verizon has not shown its OSS to be scalable, because KPMG's test was less rigorous than its test in New York and because the Massachusetts PAP had less deterrent force than the New York plan.²⁵⁶ The Department of Justice did not raise this concern in its

²⁵⁰ See Verizon Jan. 30 *Ex Parte* Letter Attach. at 14.

²⁵¹ See Massachusetts Department Massachusetts I Comments at 148; *supra* para. 71 (confirmation timeliness for non-flow-through orders); *supra* para. 74 (rejection notice timeliness for non-flow-through orders); *supra* para. 71 & n.220 (confirmation accuracy for manually processed orders). From September through December, Verizon processed these orders with 90 to 99 percent accuracy (with the exceptions of resale orders in September, for which only 82.74 percent of orders were manually processed without error, UNE-P orders in December, for which 89.62 percent were without error, and UNE-L orders in December, for which 88.86 percent were without error). See OR 6-01 (Percent Accuracy, Orders); OR 6-02 (Percent Accuracy, Opportunities). We do not address complaints about data for months before September 2000 as more recent data are available.

²⁵² See Massachusetts Department Massachusetts I Comments at 148.

²⁵³ The total number of PONs increased from 31,987 in May to 44,368 in December. See OR 3-01 (Percent Orders Rejected, competing carrier aggregate observances).

²⁵⁴ KPMG found in its Capacity Management Evaluation that Verizon's OSS are designed "in a manner that would allow them to scale to meet increases in demand." KPMG Final Report at 238 (Test POP-8-1-14).

²⁵⁵ See ALTS Massachusetts I Comments at 24; OnSite Massachusetts I Comments at 18; Winstar Massachusetts I Comments at 17, 21, 23; WorldCom Massachusetts I Comments at 48; WorldCom Massachusetts I Reply at 39; WorldCom Massachusetts I Kwapniewski/Lichtenberg Reply Decl. at para. 25.

²⁵⁶ See Department of Justice Massachusetts I Evaluation at 22.

Massachusetts II Application comments, and we believe that these concerns are addressed by the more recent Massachusetts PAP.²⁵⁷

(iv) Order Completion Notices and Jeopardy Information

83. We conclude that Verizon provides billing and provisioning completion notifiers and jeopardy information in a manner that affords competing carriers a meaningful opportunity to compete. After provisioning an order that requires physical work, Verizon updates its Service Order Processor to reflect that the work has been done; if an order requires no physical work (e.g., feature changes), the Service Order Processor is automatically updated during overnight processing. The Service Order Processor then communicates with the appropriate Verizon gateway to send a provisioning completion notice to the competing carrier. The Service Order Processor also communicates to Verizon's billing system that the work has been completed. Verizon's billing records are updated overnight, and Verizon sends a billing completion notice to the competing carrier the next day.²⁵⁸

84. Verizon's commercial performance indicates that it provides completion notices in a nondiscriminatory fashion. Verizon consistently meets the benchmark set by the Massachusetts Department for timely delivery of both provisioning completion notices and billing completion notices.²⁵⁹ Verizon has begun reporting on new measures designed to track how long it takes to update its billing systems after performing the relevant work. While these are "parity" measures, Verizon has not yet begun reporting the data for its retail operations. Nonetheless, the data regarding its wholesale performance generally show that it is updating its billing systems on average in less than a day.²⁶⁰ The Massachusetts Department also found that

²⁵⁷ See *infra* para. 88 and Part VIII.B.1. The Massachusetts PAP contains a special provision on flow-through: Verizon must achieve 80 percent total flow-through and 95 percent achieved flow-through for UNE orders. See Verizon Jan. 30 *Ex Parte* Letter Attach. at 14.

²⁵⁸ See Verizon Massachusetts I McLean/Wierzbicki Decl. at paras. 75-76.

²⁵⁹ According to data for September through December, Verizon returned provisioning and billing completion notices on time (by noon the next business day) 97 to 100 percent of the time for both resale and UNE orders. See OR 4-02 (completion notice - percent on time); OR 4-05 (work completion notice - percent on time). KPMG's test results are inconsistent with the data reflecting actual commercial usage. KPMG found that 92.9 percent of provisioning completion notices and 74.7 percent of billing completion notices were delivered over EDI by noon the next business day; and that 2.3 percent of the billing completion notices and 3.3 percent of the provisioning completion notices it expected to receive never arrived. See KPMG Final Report at 53-54 (Tests POP-1-4-8, POP-1-4-9). However, because KPMG did not evaluate the timeliness of completion notifiers using the same business rules as set out by the carrier-to-carrier working group, *see id.*, we cannot directly compare KPMG's test results against the commercial data Verizon provided, and we decline to find noncompliance on the basis of these test results.

²⁶⁰ See OR 4-06 (Average duration - work completion (SOP) to bill completion). In addition, from September through December, Verizon took more than one business day to update the billing systems for 13.99, 12.84, 15.29, and 11.99 percent of resale orders; and 9.94, 8.38, 10.66, and 5.38 percent of UNE orders. See OR 4-08 (percent SOP to bill completion > 1 business day). Also, in the same time period, Verizon took more than four business days to update its billing systems for only 1.56, 1.07, 1.95, and 0.38 percent of resale orders; and 4.06, 3.61, 2.35, and 0.23 percent of UNE orders. See OR 4-07 (percent SOP to Bill Completion >= 5 business days).

Verizon's current performance is satisfactory,²⁶¹ and we are encouraged by the Massachusetts Department's recent decision to add new measures to the PAP, which we discuss below.

85. We agree with the Massachusetts Department²⁶² that the order status and jeopardy information system created by Verizon for wholesale orders is nondiscriminatory because it allows competing carriers to access order status and jeopardy information, to the extent that it is available, in substantially the same time and manner as Verizon's retail representatives can access such information. Verizon makes jeopardy information available to its retail representatives and to competing carriers in the manner described in the *Bell Atlantic New York Order*.²⁶³ Verizon does not actively provide jeopardy notices, except that it follows the same hot cut procedures it first developed and implemented in New York.²⁶⁴

86. WorldCom asserts that because of "systems problems on Verizon's side," it has been unable to access its jeopardy reports for some days in December 2000 and January 2001.²⁶⁵ Verizon responds that it investigated and found a problem with the back-office OSS that formats the reports; pending implementation of a fix, Verizon is formatting the reports manually.²⁶⁶ We find that the reports are being provided in a nondiscriminatory manner pending the fix, and that any disruption has not had a competitive impact.

(v) Ordering Notifiers and the New York Consent Decree

87. We disagree with commenters' assertions that there is a systemic problem with ordering notifiers in Massachusetts similar to the problem that led to the Commission issuing a Consent Decree following section 271 approval in New York. After the Commission approved Bell Atlantic's -- now Verizon's -- entry into the interLATA service market in New York, it became clear that Bell Atlantic was having "problems associated with lost or mishandled orders for unbundled network elements electronically submitted by its local service competitors" over EDI.²⁶⁷ The Commission began to investigate Bell Atlantic's performance as a possible violation of section 271, and "[e]vidence submitted by Bell Atlantic in this investigation suggest[ed] that Bell Atlantic's performance in providing order acknowledgements, confirmation and rejection

²⁶¹ See Massachusetts Department Massachusetts I Comments at 147.

²⁶² See *id.*

²⁶³ See *Bell Atlantic New York Order*, 15 FCC Rcd at 4051, para. 184.

²⁶⁴ See Verizon Massachusetts I McLean/Wierzbicki Decl. at para. 74. Although Verizon's implementation of a system of active jeopardy notices likely will provide additional benefit to carriers, it is not relevant to our determination here that its current system is nondiscriminatory. Therefore we reject WorldCom's complaint that this new jeopardy system is flawed. See WorldCom Massachusetts II Comments at 33.

²⁶⁵ WorldCom Massachusetts II Lichtenberg/Chapman Decl. at para. 20.

²⁶⁶ See Verizon Massachusetts II McLean/Wierzbicki Reply Decl. at para. 20.

²⁶⁷ *Bell Atlantic-New York Authorization Under Section 271 of the Communications Act To Provide In-Region, InterLATA Service in the State of New York*, Order, 15 FCC Rcd 5413 Attach. (2000) ("Consent Decree")

notices, and order completion notices for UNE-P local service orders deteriorated following Bell Atlantic's entry into the New York long distance market.²⁶⁸ The investigation terminated in the *Consent Decree* between the Commission and Bell Atlantic. The *Consent Decree* required Bell Atlantic to begin reporting using several new measures: percent missing notifier trouble ticket PONs cleared within three business days; percent order confirmations/rejects sent within three business days; percent SOP to bill completion within three business days; percent confirmation timeliness -- total local service requests; and percent resubmission rejection.²⁶⁹ After the parties entered into the *Consent Decree*, Bell Atlantic's performance improved. Therefore, the Commission terminated the *Consent Decree*.²⁷⁰

88. We reject the assertions of WorldCom and others²⁷¹ that there is a systemic problem with notifiers in Massachusetts.²⁷² First, WorldCom points to KPMG's findings that Verizon failed to return two to three percent of completion notifiers.²⁷³ There is no evidence in the record, however, that KPMG's findings involving this limited number of notifiers would have any competitive impact. Second, WorldCom asserts that KPMG's test revealed problems with late billing completion notifiers, and some billing completion notifiers contained information not in accordance with Verizon's business rules.²⁷⁴ We are unable to compare KPMG's results against the commercial data that Verizon provided, however, because KPMG did not explain adequately how it measured the timeliness of completion notifiers.²⁷⁵ With regard to the contents of the billing completion notifiers, KPMG found there was sufficient information

²⁶⁸ *Id.* at 5418, para. 7.

²⁶⁹ *Id.* at 5425-26.

²⁷⁰ See Letter from David H. Solomon, Chief, Enforcement Bureau, Federal Communications Commission, to Edward D. Young, III, Senior Vice President-Regulatory, Bell Atlantic (June 20, 2000). Specifically, Bell Atlantic's aggregate performance under the new measurements exceeded 95 percent for four consecutive weeks. See *id.*

²⁷¹ See ALTS Massachusetts I Comments at 22; ASCENT Massachusetts I Comments at 10-11; OnSite Massachusetts I Comments at 8-9; Winstar Massachusetts I Comments at 22-23; ASCENT Massachusetts II Comments at 20. These commenters did not support their claims with specific evidence. We do not address other commenters' claims about AT&T's experiences with Verizon's OSS as AT&T did not raise these claims itself in this proceeding. See, e.g., Winstar Massachusetts I Comments at 22.

²⁷² We generally do not examine commenters' complaints that rely on data or experiences from states other than Massachusetts. With specific regard to New York, the proper vehicle for complaints that Verizon's performance has deteriorated is section 271(d)(6), not opposition to this application.

²⁷³ See WorldCom Massachusetts I Comments at 42; WorldCom Massachusetts I Kwapniewski/Lichtenberg Decl. at para. 41; WorldCom Massachusetts I Kwapniewski/Lichtenberg Reply Decl. at para. 5.

²⁷⁴ See WorldCom Massachusetts I Comments at 42-43; WorldCom Massachusetts I Kinard Decl. at para. 12; WorldCom Massachusetts I Kwapniewski/Lichtenberg Decl. at paras. 40-44, 54; WorldCom Massachusetts I Kwapniewski/Lichtenberg Reply Decl. at para. 5.

²⁷⁵ See KPMG Final Report at 53-54.

to permit it to engage in its billing activities.²⁷⁶ Finally, WorldCom asserts that carrier-to-carrier business rules underlying the commercial data Verizon provided are inadequate to reveal problems with late or missing notifiers. Specifically, WorldCom asserts that Verizon should have reported data under the measures developed in the *Consent Decree*, which capture how long it takes Verizon to send out billing completion notifiers after completing the relevant work.²⁷⁷ In our discussion of completion notifiers above, however, we explain that Verizon has begun reporting how long it takes an order to enter Verizon's billing systems after the relevant provisioning work is completed.²⁷⁸ Those data show that Verizon updates its billing systems on average in less than a day, and that Verizon takes more than four days to do so for less than five percent of orders.²⁷⁹ In combination with the data that show that Verizon sends out billing completion notifiers on time after updating its billing systems,²⁸⁰ these data show that Verizon updates its billing systems promptly after completing orders, and sends out billing completion notifiers promptly after updating its billing systems.

89. We also note that the Massachusetts Department has adopted new performance measures in the Massachusetts PAP to track this area: percent missing notifier trouble ticket PONs cleared within three business days, percent resubmission rejection, and percent SOP to bill completion within three business days.²⁸¹ These measures will inform carriers, the Massachusetts Department, and the Commission about Verizon's notifier performance going forward, and the special provision of the PAP will give Verizon a substantial disincentive for performance like that that occurred in New York.²⁸²

e. Provisioning

90. We conclude that Verizon provisions competing carriers' orders for resale and UNE-P services in substantially the same time and manner as it provisions orders for its own retail customers.²⁸³ Consistent with the Commission's approach in prior section 271 orders, we

²⁷⁶ See *id.* at 60.

²⁷⁷ See WorldCom Massachusetts I Comments at 43, 54; WorldCom Massachusetts I Kinard Decl. at para. 12; WorldCom Massachusetts I Kwapniewski/Lichtenberg Decl. at paras. 42-43; WorldCom Massachusetts I Reply at 36; WorldCom Massachusetts I Kwapniewski/Lichtenberg Reply Decl. paras. 9-10.

²⁷⁸ See *supra* Part IV.A.2.d(iv).

²⁷⁹ See *supra* n.260.

²⁸⁰ See *supra* n.259.

²⁸¹ See Verizon Jan. 30 *Ex Parte* Letter Attach. at 16-17 & App. H. These additions resolve concerns that the original PAP lacked such a provision. See ALTS Massachusetts I Comments at 57; Department of Justice Massachusetts I Evaluation at 23 n.77; WorldCom Massachusetts I Kinard Decl. at para. 12.

²⁸² As in the New York situation, we are prepared to take appropriate enforcement action under section 271(d)(6) if we find evidence of a systemic and widespread failure of Verizon to deliver ordering notifiers reliably and on time. See *infra* Part IX.

²⁸³ We discuss loop provisioning below. See *infra* Part IV.B.

examine the procedures Verizon follows when provisioning competitors' orders, its performance with respect to provisioning timeliness and its provisioning quality.²⁸⁴ Based on the results of KPMG's Massachusetts testing and Verizon's performance data, we find that Verizon demonstrates that it provides nondiscriminatory access to its provisioning processes. KPMG's test of Verizon's Massachusetts OSS demonstrates that Verizon makes available in Massachusetts the same set of standard intervals and SMARTS clock intervals²⁸⁵ for both competing carriers and its retail personnel.²⁸⁶ KPMG's test also demonstrates that, in its provisioning systems, methods and processes, Verizon provides parity between competitors' orders and its retail orders.²⁸⁷ As discussed below, Verizon's performance data for resale services and UNE-P demonstrate that Verizon provides parity in provisioning competitors' orders as compared to its retail orders.

(i) **Resale Orders**

91. We conclude that Verizon provisions orders for resale "POTS" and "specials" to competitors in substantially the same time that it provisions equivalent orders to itself.²⁸⁸ As in previous section 271 orders, we review Verizon's performance data to determine whether it provisions resale service at parity with its analogous retail services.²⁸⁹ For this application we

²⁸⁴ See *Bell Atlantic New York Order*, 15 FCC Rcd at 4058, para. 196. For provisioning timeliness, we look to missed due dates and average installation intervals and for provisioning quality, we look to service problems experienced at the provisioning stage.

²⁸⁵ Verizon offers provisioning intervals either based on standard product-specific intervals or based on its SMARTS Clock system where no specific interval is set, which assigns available appointment dates for orders requiring dispatch. See *Verizon Massachusetts I Guerard/Canny Decl.* at para. 61. See also *Bell Atlantic New York Order*, 15 FCC Rcd at 4058, para. 197 and n.629 & 631.

²⁸⁶ See Massachusetts Department Massachusetts I Comments at 157-59 (citing KPMG Final Report at 58, 63, 105, 108 (Tests POP-1-6-4, POP-1-9-4, POP-2-6-4, POP-2-8-4)). Although KPMG reported findings of "Not Satisfied" for its test of Verizon's offered due dates over the LSOG-4 EDI interface, these findings were associated with Verizon's systems incorrectly giving competitive LECs different due dates for ISDN orders than were given to Verizon's retail customers. See KPMG Final Report at 63, 108 (Tests POP-1-9-4, Tests POP-2-8-4); see also KPMG Final Report at Exception Report #16. Subsequent to the conclusion of KPMG's testing, the Massachusetts Department oversaw Verizon's implementation of system fixes to correct these problems, and continues to monitor Verizon's ISDN performance to ensure that this issue has been resolved. See Massachusetts Department Massachusetts I Comments at 159; *Verizon Massachusetts I Application App. B, Tab 545* at 3077-3079 (transcript of technical session held August 28, 2000).

²⁸⁷ See Massachusetts Department Massachusetts I Comments at 159-160 (citing KPMG Final Report at 195-204). KPMG concluded that Verizon satisfied every test element in its evaluation of parity in Verizon's provisioning processes. KPMG found that, in most cases, there is no distinction between the systems, methods, or execution of processes between wholesale and retail orders. Where parts of the retail and wholesale order provisioning processes are handled by different organizations within Verizon, the same processes are followed for both competitors' orders and Verizon's retail orders. See *id.*

²⁸⁸ Verizon's resale "specials" include orders for resold DS-0, DS-1, and DS-3 services. See *Verizon Massachusetts I Guerard/Canny Decl.* at para. 64. Resale "POTS" service is resold voice telephone service.

²⁸⁹ See *SWBT Texas Order*, 15 FCC Rcd at 18452, para. 194.

review performance data measuring how Verizon performs in meeting competitors' due dates for service installation as a reliable indicator of whether Verizon is providing nondiscriminatory service. The data indicate that Verizon satisfied parity standards for meeting competitors' resale POTS and specials due dates from September through December 2000 in Massachusetts, with a few limited exceptions.²⁹⁰ We find that the limited exceptions to Verizon's satisfactory performance are not competitively significant.²⁹¹

92. We also examine performance data measuring average completed intervals for competing carriers' resale orders, but find that these data are not an accurate indicator of Verizon's performance in provisioning these orders. As it did for its section 271 application in New York, Verizon offers un rebutted evidence that the disparity in the performance data between average completed intervals for competing carriers' resale orders and Verizon's retail orders in Massachusetts is substantially caused by several factors outside of Verizon's control.²⁹²

²⁹⁰ See Metric PR 4 (resale missed appointments). The performance data for the PR 4 series of metrics generally show no statistically significant disparities in Verizon's performance in meeting competitors' due dates for resale POTS provisioning.

²⁹¹ Two PR 4 submetrics, PR 4-02 (average delay days-total) and PR 4-05 (missed non-dispatch due dates), indicate some statistically significant disparities in Verizon's performance in meeting competitors' due dates for resale POTS provisioning in September and October 2000. In September 2000, competitors experienced an average of 9.05 provisioning delay days for resale POTS, as compared to 4.64 delay days for Verizon retail customers, and in October competitors experienced an average of 5.84 provisioning delay days for resale POTS, as compared to 3.64 delay days for Verizon retail customers (PR 4-02). Also, in September, Verizon missed 0.20 percent of competitors' non-dispatch due dates for resale POTS as compared to 0.11 percent of non-dispatch due dates for its retail customers, and in October Verizon missed 0.12 percent of competitors' non-dispatch due dates for resale POTS as compared to 0.04 percent of non-dispatch due dates for its retail customers, differences of 0.09 and 0.08 percent in September and October respectively (PR 4-05). We conclude that these disparities alone do not warrant a finding of noncompliance. Our finding is underscored by the lack of statistically significant disparities in performance under these metrics in November and December 2000. See *id.* Because of Verizon's satisfactory performance during this latest two month period, we conclude that Verizon's previous performance does not warrant a finding of noncompliance. Furthermore, although Verizon's performance under PR 4-02 (average delay days-total) for resale specials seems to show a disparity between retail and wholesale performance in December 2000 (29.67 competitor delay days versus 12.10 for Verizon), we conclude that these data alone fail to show a lack of parity in Verizon's treatment of competitors' resale specials orders, due to the fact that only three competing carrier observations were used to calculate these data. See Metric PR 4-02 (average delay days-total for resale specials, listing 3 competing carrier observations).

²⁹² In the *Bell Atlantic New York Order*, the Commission concluded that the disparity between average completed intervals for competing carriers and Bell Atlantic was substantially caused by several factors outside of Bell Atlantic's control, including competing carriers choosing longer installation dates without proper date-coding (the "W-coding" problem) and ordering products and services with long standard intervals (the "order mix" problem). See *Bell Atlantic New York Order*, 15 FCC Rcd at 4061-62, para. 203. Verizon offers evidence here demonstrating that, under the LSOG 2 interface, competing carriers can and do choose longer than standard installation dates for resale services without proper date-coding, and are ordering a relatively larger share of products and services with longer standard intervals than Verizon. See *Verizon Massachusetts I Guerard/Canny Decl.* at paras. 66-77. Based on this un rebutted evidence, we conclude that the disparity in Massachusetts between average completion intervals for competing carriers' resale orders and Verizon's retail orders is caused by factors outside of Verizon's control, and renders its performance data on resale average completed intervals unreliable. We note for future applications, however, that Verizon's LSOG 4 ordering interface corrects the problem of incorrect installation date coding (the "W-coding" problem). We therefore expect that, over time, competing carriers' selection of longer installation (continued....)

Therefore, consistent with the Commission's findings in the *Bell Atlantic New York Order*, we accord little weight here to performance data evidencing the average intervals in which Verizon completes resale orders in Massachusetts.²⁹³ Instead, as discussed above, we rely on the performance data measuring Verizon's performance in meeting competitors' due dates for resale service installation.²⁹⁴

93. Verizon also demonstrates that the quality of resale installations provided to competitors' customers is generally the same as, or better than, similar work performed for its own retail customers. The data demonstrate that Verizon generally receives trouble reports from competitors' resale customers at the same rate as from its own retail customers, and in some cases demonstrate that Verizon receives trouble reports from competitors' customers at a lower rate.²⁹⁵ We find that the limited exceptions to Verizon's parity performance are not competitively significant.²⁹⁶

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dates should have a diminished effect on the reliability of performance data for average completed intervals. *See* Verizon Massachusetts I Guerard/Canny Decl. at para. 76.

²⁹³ *See Bell Atlantic New York Order*, 15 FCC Rcd at 4061-66, paras. 202-10.

²⁹⁴ *See supra* at para. 91.

²⁹⁵ *See* Metric PR 6 (installation quality for resale services). From September 2000 through December 2000, Verizon's performance data under the PR 6 series of metrics generally show no statistically significant disparities in installation quality for competitors offering resale services as compared to Verizon's retail service.

²⁹⁶ Three PR 6 submetrics measuring installation quality for resale services show some statistically significant disparities between Verizon's provisioning performance for itself and for competitors in September and December 2000. In September 2000, the percentage of installation troubles reported within 30 days for 2-wire xDSL services (PR 6-01) was 6.90 percent for competing carriers versus 1.93 percent for VADI, a difference of 4.97 percent; these data, however, were based on 29 competing carrier orders. Due to the low volume of competitors' orders, a handful of trouble reports can cause seemingly large variations in the monthly trouble reports. *See, e.g.*, Letter from Dee May, Executive Director Federal Regulatory, Verizon, to Magalie Roman Salas, Secretary, Federal Communications Commission, CC Docket No. 01-9 (filed March 13, 2001) (Verizon March 13 *Ex Parte* Letter). A 4 month average of Verizon's data for resold 2-wire xDSL under the PR 6-01 submetric from September through December 2000 reduces the disparity to 1.10 percent, which is not competitively significant. In December 2000, the percentage of installation troubles reported within 30 days for 2-wire digital services (not including xDSL services) where no trouble was found on the network (PR 6-03) was 4.74 percent for competing carriers versus 2.06 percent for VADI; the overall trouble report rate within 30 days (PR 6-01) for the same services in that month, however, was much lower for competing carriers (0.43) than for VADI (1.24). Finally, also in December 2000, the percentage of installation troubles reported within 30 days (PR 6-01) for resold special services was 0.71 percent for competing carriers versus 0.47 for Verizon; the difference between the two numbers, however, amounts to 0.24 percent, and no commenter has complained about Verizon's performance under this measure. We conclude that these disparities alone are not competitively significant, and do not warrant a finding of noncompliance in Verizon's provision of resale services to competitors. Verizon's performance under the PR 6 metrics for digital services, *i.e.*, resale xDSL, is also relevant to our review of its compliance with its resale obligations under checklist item 14. *See infra* Part V.E.

(ii) UNE-P Orders

94. Based on a review of performance data for UNE-P service, we conclude that Verizon provisions competing carrier orders for these network combinations in the same time as it provisions equivalent retail services and at the same level of quality (*i.e.*, with a comparably low level of troubles reported within the first ten days after installation). Verizon's performance data demonstrate that, from September through December 2000 in Massachusetts, Verizon provisioned UNE-P orders in substantially the same time that it provisioned similar orders for itself.²⁹⁷ Verizon's data also indicate that, over this time period, it provisioned UNE-P orders in substantially the same manner (*i.e.*, quality) as it provisioned comparable retail orders for itself in Massachusetts.²⁹⁸ While there are disparities with respect to some measurements of UNE-P provisioning performance, these disparities do not appear to be competitively significant.²⁹⁹ Taken as a whole, we find this performance to be acceptable.

f. Maintenance and Repair

95. *Functionality.* We conclude that Verizon offers maintenance and repair interfaces and systems that enable a requesting carrier to access all the same functions that are available to

²⁹⁷ See Metrics PR 2-01, PR 2-03, PR 2-04, and PR 2-05 (average interval completed for platform orders), and Metrics PR 4-04 and PR 4-05 (missed appointments for platform orders).

²⁹⁸ Verizon's performance data demonstrate that, from September 2000 through December 2000, competitors consistently reported a lower percentage of installation troubles within the first 30 days of installation of UNE-P than Verizon's retail POTS customers. See Metric PR 6-01 (for POTS – Provisioning – Other). In a letter, Verizon explains that this measure captures only UNE-P orders. See Verizon March 13 *Ex Parte* Letter.

²⁹⁹ Two provisioning submetrics show some statistically significant disparities in Verizon's provisioning performance with respect to UNE-P dispatch (Metric PR 4-04) and UNE-P non-dispatch (Metric PR 2-01) orders. For the reasons discussed here, we find these disparities do not warrant a finding of noncompliance. Verizon missed a higher percentage of competitors' due dates for UNE-P dispatch orders than for its own retail POTS service in September and October 2000 (19.05 versus 8.70 percent and 15.28 versus 7.83 percent, respectively) (Metric PR 4-04 for platform dispatch orders). These data, however, are based on low competitor order volumes (42 UNE-P dispatch orders in September and 72 in October). Due to the low volume of competitors' orders, a handful of missed due dates can cause seemingly large variations in the monthly trouble reports. See, *e.g.*, Verizon March 13 *Ex Parte* Letter. While these September and October 2000 data respectively show disparities of 10.35 and 7.45 percent between the rate Verizon misses POTS dispatch provisioning due dates for itself as compared to UNE-P competitors, a 4 month average of Verizon's data from September through December 2000 reduces that disparity to 4.35 percent. Furthermore, Verizon's November and December 2000 performance data do not show any statistically significant disparities under this submetric, and the data show a clear downward trend towards parity from September through December. See Metric PR 4-04 (missed due dates for platform dispatch order). With respect to non-dispatch UNE-P orders, although Verizon's October 2000 performance data show a disparity between the intervals in which competitors' UNE-P orders are completed as compared to Verizon's retail POTS orders (1.77 days vs. 1.26 days) (Metric PR 2-01), Verizon's other average completed interval measures for UNE-P show no statistically significant disparities in that month, nor do any of its average completed interval measures for UNE-P in November and December 2000. Furthermore, the performance data show that Verizon consistently misses a lower percentage of competitors' due dates for UNE-P non-dispatch orders than for its own retail POTS service (Metric PR 4-05). See Metrics PR 2-01, PR 2-03, PR 2-04, and PR 2-05 (average interval completed for platform orders), and PR 4-04 and PR 4-05 (missed appointments for platform orders).

Verizon's retail representatives. Verizon provides competing carriers with several options for requesting maintenance and reporting troubles. Competing carriers may electronically access Verizon's maintenance and repair functions for UNE-Loop, UNE-P, and resale through the GUI Repair Trouble Administration System (RETAS) interface or the application-to-application Electronic Bonding Interface (EBI).³⁰⁰ Both the RETAS and EBI interfaces flow directly into Verizon's back-end OSS and enable competing carriers to perform the same functions, in the same manner, as Verizon's retail operations.³⁰¹ Although the EBI interface does not support every maintenance and repair function supported by RETAS,³⁰² the Commission has not in the past required applicants to provide an integratable, application-to-application interface for maintenance and repair.³⁰³ Furthermore, Verizon's performance data indicate that its RETAS maintenance and repair interface is available in a manner that affords an efficient competitor a meaningful opportunity to compete.³⁰⁴ KPMG's functional testing of Verizon's RETAS maintenance and repair interface confirms the satisfactory performance demonstrated by Verizon's performance data.³⁰⁵ Based on the evidence before us, we conclude that Verizon satisfies its obligation of providing maintenance and repair functionality to competitors in substantially the same manner that it provides such functionality to itself. Finally, we note that

³⁰⁰ See Verizon Massachusetts I McLean/Wierzbicki Decl. at paras. 82-84.

³⁰¹ See Verizon Massachusetts I McLean/Wierzbicki Decl. at paras. 83-91. The RETAS interface enables carriers to perform the same maintenance and repair functions as Verizon's retail operations, including: (1) testing resale POTS and UNE-P lines, as well as special service lines at DS-0 and lower; (2) creating trouble tickets; (3) obtaining trouble status; (4) modifying trouble tickets; (5) canceling trouble tickets; (6) requesting trouble report histories; and (7) trouble ticket service recovery. Although it supports all other maintenance and repair functions for UNE loops, the RETAS interface does not support testing of UNE loops, because these loops are not connected to a Verizon switch. Instead, competing carriers must test UNE loops through their own switches. See *id.* at para. 83.

³⁰² Verizon's EBI interface offers similar functionality to the RETAS interface, with the exceptions of: (1) automatic feature updates to switches through Verizon's StarMem system for features ordered by customers but not yet active; and (2) testing special service lines. Verizon indicates that it has implemented EBI in Massachusetts to support local services and local service circuits consistent with industry standards, where they exist. See *id.* at paras. 83-84 and Attach. O.

³⁰³ See *Bell Atlantic New York Order*, 15 FCC Rcd at 4069, para. 215.

³⁰⁴ See Metrics PO 2-01, PO 2-02, and PO 2-03 (OSS availability for Maint. Web GUI (RETAS)). Verizon's performance data show that its RETAS interface was generally available during more than 99.5 percent of scheduled hours of availability from September through December 2000; although non-prime time RETAS availability was 99.25 percent in December, we do not find this deviation from the benchmark to be competitively significant.

³⁰⁵ KPMG found that Verizon satisfied every test element of its functional evaluation of Verizon's maintenance and repair functions. See KPMG Final Report at 247-59. KPMG's functional test evaluated RETAS both for its conformance with Verizon documentation and for its comparative functionality to Verizon's retail trouble administration systems. See *id.* at 239. For its functional evaluation of the RETAS interface, KPMG evaluated the following functions: (1) mechanized loop test; (2) switched access remote test; (3) create trouble ticket; (4) modify trouble ticket; (5) obtain trouble ticket status; (6) close trouble ticket; (7) perform service recovery; (8) request trouble ticket history; and (9) request extended trouble ticket history. See KPMG Final Report at 246.