

## APPENDIX A

### Wholesale Support Processes and Performance Measures

In this Appendix, we examine BellSouth's wholesale support processes—the automated and manual processes required to make resale services and unbundled elements, among other items, meaningfully available to competitors—and performance measures under the principles set forth in the Commission's decision on Ameritech's section 271 Michigan application; the Department's Evaluation regarding SBC's section 271 Oklahoma application, filed on May 16, 1997; and the Department's Evaluation regarding Ameritech's section 271 Michigan application, filed on June 25, 1997.<sup>1</sup>

#### I. Wholesale Support Processes Overview

In evaluating BOC applications under section 271, the Department considers whether a BOC has made resale services and unbundled elements practicably available by providing them via wholesale support processes, including the critical access to OSS functions that provide needed functionality and are demonstrated to operate in a reliable, nondiscriminatory manner at reasonably foreseeable volumes, to ensure that entrants have a meaningful opportunity to compete.<sup>2</sup> As the Commission has stated, “we seek to ensure that a new entrant's decision to enter the local exchange market in a particular state is based on the new entrant's business considerations, rather than the availability or unavailability of particular OSS functions.” *Michigan Order* ¶ 133.

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*See generally Michigan Order* ¶¶ 128-221; DOJ Oklahoma Evaluation at 26-30, App. A, Ex. D (Affidavit of Michael J. Friduss); DOJ Michigan Evaluation at 21-24, 38-40, App. A. Comments on the current application are cited herein by party name, *e.g.*, “Sprint Comments”; affidavits, declarations, and such are cited by party name and affiant name, *e.g.*, “AT&T Bradbury Aff.”

DOJ Oklahoma Evaluation at 68-71.

A. FCC Standard<sup>3</sup>

As explained in the Michigan Order, the Commission will first consider “whether the BOC has deployed the necessary systems and personnel to provide sufficient access to each of the necessary OSS functions and whether the BOC is adequately assisting competing carriers to understand how to implement and use all of the OSS functions available to them.” *Michigan Order* ¶ 136.<sup>4</sup> As to the *functionality* of those systems, the Commission determined that “[f]or those functions that the BOC itself accesses electronically, the BOC must provide equivalent electronic access for competing carriers” and that “the BOC must ensure that its operations support systems are designed to accommodate both current demand and projected demand of competing carriers for access to OSS functions.” *Id.* ¶ 137. As to the *support* of those systems, the Commission made particularly detailed determinations:

A BOC . . . is obligated to provide competing carriers with the specifications necessary to instruct competing carriers on how to modify or design their systems in a manner that will enable them to communicate with the BOC’s legacy systems and any interfaces utilized by the BOC for such access. The BOC must provide competing carriers with all of the information necessary to format and process their electronic requests so that these requests flow through the interfaces, the transmission links, and into the legacy systems as quickly and efficiently as possible. In addition, the BOC must disclose to competing carriers any internal “business rules,” including information concerning the ordering codes [including universal service ordering codes (“USOCs”) and field identifiers (“FIDs”)] that a BOC uses that competing carriers need to place orders through the system efficiently.

*Michigan Order* ¶ 137 (footnotes omitted).

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For purposes of assessing checklist compliance and the openness of a BOC’s local market under our competitive standard, the Department will employ the inquiry adopted by the Commission regarding OSS, as it offers the best means for ensuring that the necessary functions are available and will remain available when called upon in greater volumes.

*See also* DOJ Oklahoma Evaluation, App. A at 69 (“The BOC must build its part of an interface and provide CLECs with information and cooperation sufficient to allow the CLECs to construct their part of the interface to the BOC.”)

Second, the Commission will consider “whether the OSS functions that the BOC has deployed are operationally ready, as a practical matter.” *Michigan Order* ¶ 136. Here, “the Commission will examine operational evidence to determine whether the OSS functions provided by the BOC to competing carriers are actually handling current demand and will be able to handle *reasonably foreseeable demand volumes*.” *Id.* ¶ 138 (emphasis added). The Commission has agreed that the “most probative evidence” of operational readiness is actual commercial usage and that carrier-to-carrier testing, independent third-party testing, and internal testing, while they can provide valuable evidence, “are less reliable indicators of actual performance than commercial usage.” *Id.*

The Commission reiterated its previous determinations regarding both the parity and “meaningful opportunity to compete” standards. *See, e.g., id.* ¶ 130. Regarding the parity standard, the Commission clearly stated that parity means equality and that this is to be applied broadly:

For those OSS functions provided to competing carriers that are analogous to OSS functions that a BOC provides to itself in connection with retail service offerings, the BOC must provide access to competing carriers that is equal to the level of access that the BOC provides to itself, its customers or its affiliates, in terms of quality, accuracy and timeliness. We conclude that equivalent access, as required by the Act and our rules, must be construed broadly to include comparisons of analogous functions between competing carriers and the BOC, even if the actual mechanism used to perform the function is different for competing carriers than for the BOC’s retail operations.

*Id.* ¶ 139. The Commission specifically found that this standard of equivalent access applies to the OSS functions associated with pre-ordering, ordering, and provisioning for resale services; repair and maintenance for resale services; and repair and maintenance for UNEs; and measuring daily customer usage for billing purposes. *Id.* ¶ 140.

#### B. Application

In applying these standards the Commission determined that BOC OSSs must be judged on an end-to-end basis, concluding that “it is necessary to consider all of the automated and manual

processes a BOC has undertaken to provide access to OSS functions,” including the point of interface, or gateway, between CLEC and BOC systems; all BOC internal systems; and both the electronic and manual links between the gateway and legacy systems. *Id.* ¶ 134. The Commission explicitly rejected arguments that the duty to provide non-discriminatory access does not extend beyond the interface component. *Id.* ¶ 135.

Satisfaction of these requirements will most often entail, first, automation of many of the interfaces between a BOC and its competitors through which information is exchanged. Application-to-application interfaces are particularly helpful because they allow competing carriers to build their own software for processing transactions with a BOC.<sup>5</sup> In instances in which application-to-application interfaces might be too expensive for smaller carriers who cannot afford such software development, terminal-type, human-to-machine interfaces may be appropriate. SBC, for example, is developing multiple interfaces for both small and large carriers to support almost every automated wholesale support function.<sup>6</sup>

In the absence of application-to-application interfaces, it is part of a BOC’s burden to show that—notwithstanding the resulting disparities between BOC and CLEC operations and the

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Indeed, many of the references to automated interfaces in the Department’s prior evaluations and the Commission’s prior decisions clearly contemplate application-to-application interfaces. For example, the Department has stated that “[t]he BOC must build its part of an interface and provide CLECs with information and cooperation sufficient to allow the CLECs *to construct their part of the interface* to the BOC.” DOJ Oklahoma Evaluation, App. A at 69 (emphasis added). Unless a BOC is providing an application-to-application interface, there is no CLEC-side of the interface that needs to be constructed.

Similarly, the Commission has stated, “A BOC . . . is obligated to provide competing carriers with the specifications necessary to instruct competing carriers on *how to modify or design their systems* in a manner that will enable them to communicate with the BOC’s legacy systems and any interfaces utilized by the BOC for such access.” *Michigan Order* ¶ 137 (emphasis added). A defined application-to-application interface is the most efficient method for CLEC systems to communicate with BOC systems.

*See* DOJ Oklahoma Evaluation at 74 (“SBC claims to offer multiple interfaces through which CLECs eventually will be able to perform most functions, including resale ordering functions. This approach, when operational, may fulfill the needs of both large and small competitors and comply with the Commission’s complementary ‘nondiscrimination’ and ‘meaningful opportunity’ requirements.”).

significant disadvantages imposed on CLECs—it is “provid[ing] sufficient access to each of the necessary OSS functions,” *Michigan Order* ¶ 136, and where the functions provided to CLECs are analogous to those provided to itself, to demonstrate that CLEC access to these functions “is equal to the level of access that the BOC provides to itself, its customers or its affiliates, in terms of quality, accuracy and timeliness,” *id.* ¶ 139.

Second, BOCs will need to automate, to varying degrees, the interaction of these interfaces with their internal OSSs. Such automation often will be critical to the meaningful availability of resale services and unbundled elements. The Commission’s nondiscrimination requirement obligates BOCs to provide automated interaction between interfaces and their own OSSs where such access is automated analogously for the BOCs’ retail operations, or where the lack of such automation would cause significant barriers to entry, denying competitors a meaningful opportunity to compete. As discussed above, the systems must be judged on an end-to-end basis.

In addition to automation generally,<sup>7</sup> adherence to industry standards for interfaces between carriers in particular will generate further economic benefits both for both CLECs and incumbents. Committees of the Alliance for Telecommunications Industry Solutions (ATIS) are continuing to develop and enhance standards for ordering resale services and some unbundled elements via electronic data interchange (EDI). The Department understands that standards for pre-ordering

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We note that our focus on automation flows from our assessment that manual processes are likely to result in significantly greater problems when called upon to handle a competitively significant number of orders. As parties have noted, the experience in California, where Pacific Bell’s systems essentially broke down, underscores this point. *See MCI v. Pacific Bell*, Cal. PUC No. 96-12-026 (Sept. 24, 1997), at 27, 29 (finding that MCI ceased marketing after Pacific Bell built up backlogs of 4,000 to 5,000 orders and that, by Pacific Bell’s own admission, its systems did not offer their competitors resold services at parity). We do not suggest that we would never approve of some manual intervention, *see, e.g.*, DOJ Oklahoma Evaluation, App. A at 70 n. 90, but a BOC would need to demonstrate—to a greater degree of proof—that such systems would remain functional when called upon to perform at greater levels of demand. Of course, to the extent that the industry standards bodies call for automated interfaces, we will view this judgment as further counseling in favor of such systems.

functions are also expected soon. The Department will ordinarily expect BOCs to adhere to such standards following a reasonable period of development in cooperation with competing carriers wishing to use the standardized interface.<sup>8</sup>

Finally, proper performance measures with which to compare BOC retail and wholesale performance, and to measure exclusively wholesale performance, are a necessary prerequisite to demonstrating compliance with the Commission's "nondiscrimination" and "meaningful opportunity to compete standards." Without comprehensive measures as a means of tracking performance and a track record of performance under those measures, it will be difficult—if not impossible—for competitors and regulators to detect backsliding of performance after in-region interLATA entry is authorized.

## **II. BellSouth's Wholesale Support Processes**

The Department concludes that BellSouth has not demonstrated that the access to OSS functions that it provides to competing carriers is equivalent to the access it provides itself. As explained below, the Department concludes that there are significant problems with BellSouth's system, and because of these problems, the Department has not attempted to address each issue raised in the comments on BellSouth's application or, more generally, provide detailed comments regarding all aspects of BellSouth's wholesale support processes.<sup>9</sup>

BellSouth's processes are operated on a regional, rather than a state-by-state basis, and thus our analysis is not limited to South Carolina activities. Satisfactory performance in other states will

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ATIS noted at a recent FCC Forum on OSS access that some ATIS committee standards are usually stable enough at initial—as opposed to final—closure to allow carriers to begin interface development at such time. ATIS Presentation at the FCC Forum on Operations Support Systems, May 28, 1997. This indicates that in some instances BOCs should be initiating development efforts even prior to ATIS final closure in accordance with the needs of competing carriers.

The Department emphasizes that it has not affirmatively concluded that the processes not addressed herein are in compliance with the requirements of section 271.

be regarded as evidence that the same systems will work satisfactorily in South Carolina, unless there are specific reasons to conclude otherwise. Conversely, if a problem exists with BellSouth's processes in another state, we assume that the problem exists in South Carolina unless shown otherwise.

A. State Commission OSS Review

BellSouth's application places great emphasis on the conclusion of the South Carolina Public Service Commission (SCPSC) that BellSouth's SGAT complies with the checklist and argues that the SCPSC determinations are entitled to great weight. BellSouth Brief at 18. The Department has two observations with regard to state commission review of BellSouth's systems.

First, the SCPSC issued its decision on July 31, 1997, prior to the Commission's decision on Ameritech's 271 application for Michigan. Accordingly, the SCPSC did not have the benefit of the Commission's Michigan decision, including the important discussion of OSS standards discussed above, when it reviewed BellSouth's SGAT and reached its decision. It is not clear how the SCPSC interpreted the standards it said it was applying or how those standards compare, in actual application, to the standards described in the Michigan Order. For example, the SCPSC found that BellSouth's systems are "operational," *e.g.*, SCPSC Order at 34, 37; the context indicates that its finding was based on the fact that the systems are presently in use. It did not, as the subsequent Michigan order describes, look beyond whether the systems are in use to "whether the OSS functions that the BOC has deployed are *operationally ready*, as a practical matter," *Michigan Order* ¶ 136 (emphasis added), which includes a determination of "whether the OSS functions provided by the BOC . . . will be able to handle *reasonably foreseeable demand volumes*," *id.* ¶ 138 (emphasis added). Moreover, there is evidence in the present record regarding events that have

occurred since the SCPSC proceedings.<sup>10</sup> The Commission should take these factors into account when considering the SCPSC evaluation.

Second, the Department notes that BellSouth's processes are operated on a regional, rather than a state-by-state basis, and that not all state commissions in BellSouth's region are equally satisfied with BellSouth's systems and the access to those systems that BellSouth is presently providing to CLECs. For example, the Alabama Public Service Commission recently issued an order delaying its decision on BellSouth's SGAT stating that "it . . . appears that BellSouth's petition is not yet timely."<sup>11</sup> Of the two major areas of concern described, one relates to OSS. The Commission stated, "It appears to us that BellSouth's OSS interfaces must be further revised to provide nondiscriminatory access to BellSouth's OSS systems as required by § 251(c)(3) of the 96 Act. We have concerns that such nondiscriminatory access is not currently being provided." *Id.* The order requires a live OSS demonstration for the state commission, its staff, and the intervenors as "the most expeditious and effective method of ensuring that *those OSS shortcomings are rectified* in a timely manner." *Id.* (emphasis added).<sup>12</sup> Moreover, the staff of the Florida Public Service Commission has recommended that the Florida commission determine that BellSouth's SGAT does not comply with section 252(f) of the 1996 Act. The staff concluded that there are numerous significant problems with BellSouth's OSS interfaces and systems that preclude a finding that they

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For example, AT&T describes problems experienced in August and September 1997, since the SCPSC proceeding, which have impeded, and in some instances prevented, its representatives from using LENS. *See* AT&T Bradbury Aff. ¶¶ 258-61.

Alabama Order at 7. The order is attached to this evaluation as Exhibit 5.

The Department notes that CLECs have often told the Department that OSS deficiencies have been addressed only after they have been raised with state regulatory authorities, often in demonstrations such as these.



meet the requirements of the 1996 Act.<sup>13</sup> Finally, it is reported that the Georgia PSC recently expressed continuing concerns about Bell South's OSSs and lack of performance standards.<sup>14</sup>

## B. Functionality & Support

The comments describe problems that CLECs have faced with each of the OSS functions: pre-ordering, ordering, provisioning, maintenance and repair, and billing. The Department's analysis focuses on BellSouth's support for pre-ordering and for ordering and provisioning and concludes that BellSouth has not satisfied its burden of demonstrating non-discriminatory access to these functions.

### 1. *Pre-Ordering*

On the basis of the evidence currently in the record, BellSouth has not satisfied its burden of demonstrating the successful operation of its pre-ordering support processes. As its pre-ordering interface, BellSouth has developed a Web-based application known as the Local Exchange Navigation System (LENS), which provides a terminal interface, albeit a graphical one, to the user. Among the deficiencies described in the comments are the lack of an application-to-application interface, discriminatory functionality, and inadequate capacity. We discuss the testing and capacity issues in a later section on Operational Readiness.

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*See* FPSC Staff Recommendation. Relevant excerpts from the recommendation are attached to this evaluation as Exhibit 6.

According to the *Communications Daily* article, the Georgia PSC "recognized that 'improvements have been made' in OSS, but said 'continued progress is imperative' and observed that an "[a]bnormally high number of rejections of service orders placed by new entrants 'can chill and even inhibit competition.'" The article quotes PSC Chairman Stanley Wise as saying that the PSC will re-visit these issues when BellSouth files a 271 application for Georgia "and judge them 'with a much broader and higher standard.'" "Telephony," *Communications Daily*, Oct. 30, 1997.

a. *Application-to-Application Interfaces*

BellSouth describes its ongoing efforts to develop, pursuant to an agreement with AT&T, a customized application-to-application pre-ordering interface called “EC-LITE,”<sup>15</sup> but it is undisputed that EC-LITE is not yet available; neither has BellSouth provided an adequate substitute.<sup>16</sup> An interface that will be made available in the future, especially one not yet “stress tested” in a convincing manner, cannot satisfy a BOC’s statutory obligation under the checklist. Hence we conclude that BellSouth cannot presently rely upon the EC-LITE interface to demonstrate

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EC-LITE is not based on industry standards. The industry is working on standards for application-to-application interfaces for pre-ordering functions, but such standards do not yet exist. We commend, in this regard, Bell South’s commitment to adhere to any future industry standards addressing OSS standards.

BellSouth asserts that there are two mechanisms by which CLEC systems developers could use the LENS system to develop an application-to-application pre-ordering interface: using Common Gateway Interface (CGI) scripts and parsing the HTML character stream used for formatting and displaying LENS screens. Since the use

of either HTML parsing or CGI scripts requires a fully documented, stable interface against which the CLEC can develop its own system, given the current state of the LENS interface and documentation, BellSouth has not shown that either of these approaches are adequate.

As to documentation, the Stacy OSS affidavit states that BellSouth has a CGI specification that it has provided to requesting CLECs, Stacy OSS Aff. ¶ 44, but there is no representation made regarding specifications for the HTML character streams or regarding the finality or practical useability of any such specifications. AT&T presents a more detailed account regarding the specifications in its comments and in the Bradbury affidavit. It describes continual contacts with BellSouth on these issues since mid-1996, and although it refers to some draft specifications, AT&T states that BellSouth has never provided final, useable specifications. Indeed, AT&T cites BellSouth witnesses who have testified before state commissions that firm specifications require a final LENS interface that will not exist until at least 1998. *See generally* AT&T Bradbury Aff. ¶¶ 32-45. Similarly, MCI states that notwithstanding repeated requests as recent as September 5, 1997, BellSouth still has not provided up-to-date, useable specifications. MCI King Decl. ¶ 48. MCI also explains that it initially attempted to develop software to parse the HTML character stream, a process MCI describes as “screen scraping,” but that this is an expensive process that produces an inferior result and is therefore discriminatory. *Id.* ¶¶ 49-50, 59.

Although BellSouth may well have begun to make these interfaces available, the fact that MCI has yet to employ successfully either interface strongly suggests that Bell South has not provided adequate specifications so as to enable MCI to begin testing. Even to the extent that any delays in beginning testing CGI correspond simply to the time that it has taken MCI to understand the interface --that is, assuming that the interface is fully functional -- we would still not view CGI as meeting Bell South’s OSS pre-ordering obligation under the checklist because CGI has not undergone any significant “stress testing”--even of the carrier-to-carrier variety.

the adequacy of its pre-ordering interfaces. Accordingly, the Department concludes that BellSouth presently provides no application-to-application interface for accessing pre-ordering functions.

The Department has previously contrasted terminal-type, human-to-machine interfaces with application-to-application interfaces and explained the competitive significance of providing application-to-application interfaces to CLECs who have developed and maintain their own internal OSSs. Among the problems such CLECs face in the absence of application-to-application interfaces is a double-entry problem:

[U]nlike [a BOC's] retail operations, a competing carrier with its own separate OSSs is forced to manually enter information twice—once into the [BOC] interface and a second time into its own OSSs. For high volumes of orders, such double entry would place a competitor at a significant disadvantage by introducing additional costs, delays, and significant human error.

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Application-to-application interfaces allow a competitor to design its own systems based on standardized sets of inter-carrier transactions. Leveraging these standard interfaces, a competitor may then present its customer service representatives with its own set of customized screens and information, and automatically populate its own databases with information at the same time it interacts with a BOC's systems.

DOJ Oklahoma Evaluation at 75-76. Thus, as to this double-entry issue alone,<sup>17</sup> the lack of application-to-application interfaces raises issues both as to parity with a BOC's internal systems and as to whether the access to the BOC's systems provides CLECs a meaningful opportunity to compete. In the absence of application-to-application interfaces, it is part of a BOC's burden to show that—notwithstanding the resulting disparities between BOC and CLEC operations and the significant disadvantages imposed on CLECs—it is “provid[ing] sufficient access to each of the

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In addition, as discussed below, without application-to-application interfaces, CLECs cannot deploy integrated systems, such as BOCs do, for ordering and pre-ordering. Finally, CLECs cannot deploy single systems to access multiple BOCs' OSSs. When they are able to deploy their own systems, “CLECs need only train their representatives to use this one customized system to interact with all BOCs, regardless of the interface provided, rather than having to incur the cost of training them on many different systems depending on the BOC.” DOJ Oklahoma Evaluation at 76.

necessary OSS functions,” *Michigan Order* ¶ 136, and where the functions provided to CLECs are analogous to those provided to itself, as pre-ordering and ordering functions for resold services are, to demonstrate that CLEC access to these functions “is equal to the level of access that the BOC provides to itself, its customers or its affiliates, in terms of quality, accuracy and timeliness,” *id.* ¶ 139.

On the present record, Bell South has not justified its lack of a pre-ordering application-to-application interface. Without such an interface, a CLEC with its own internal OSSs cannot integrate pre-ordering functions into its OSSs, and thus its users must manually transfer data between the LENS interface and its internal OSSs. BellSouth responds that it is still providing the necessary functionality because CLECs can simply cut-and-paste information between LENS and other computer applications and thus need not re-key the data. Stacy OSS Aff. ¶ 43. We find this explanation inadequate. First, this argument ignores that basic fact that, just like re-keying data, cutting-and-pasting data between fields of different applications is a manual, error-prone process. Second, unless the corresponding fields of the two applications require the same, identically-formatted data, this approach will require the CLEC operator to take additional manual steps to reformat the data,<sup>18</sup> which would create additional opportunities for errors.<sup>19</sup> Accordingly, a cutting-and-pasting approach clearly would be unmanageable for a CLEC seeking to enter the market on

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For example, if one system were to combine street, city, state, and ZIP code together and the other required them to be separate fields, the user would have to manually combine or split apart the data when moving from one application to the other.

Problems with the introduction of errors is compounded when CLECs lack the business rules applied by BellSouth’s systems and thus cannot pre-validate their orders and catch such errors before transmitted. That problem is made yet worse when BellSouth does not send rejection notices back electronically but rather uses a slower, hard-to-manage fax-based process. Thus, the total situation can be much worse than any individual problem might suggest.

any significant scale. Thus, BellSouth's pre-ordering interfaces do not provide the necessary OSS functionality as called for by the statutory standard.

BellSouth's failure to develop appropriate interfaces at this juncture prevents CLECs from achieving parity with BellSouth's systems and thus precludes full and fair competition. The essential reason that the Department regards application-to-application pre-ordering interfaces so highly is that such interfaces will, combined with application-to-application ordering interfaces, enable CLECs to develop their own systems for integrating the pre-ordering and ordering functions. Indeed, even Bell South acknowledges that "there is no strict delineation between pre-ordering and ordering, as many pre-ordering activities generally occur in the context of negotiating a service order." Stacy OSS Aff. ¶ 5. Thus, not surprisingly, BellSouth provides its retail representatives with integrated systems that seamlessly support both pre-ordering and ordering functions. While acknowledging that "CLECs have complained that BellSouth's systems do not provide integration of the pre-ordering and ordering functions," BellSouth responds that except when the CLEC uses LENS for both pre-ordering and ordering<sup>20</sup> such integration is the responsibility of the CLEC. *Id.* ¶ 61. While CLECs are responsible for this integration, BellSouth's explanation fails to justify its position because, as explained above, BellSouth's systems that are necessary to accomplish this task have yet to be fully specified, implemented, and tested. Thus, what BellSouth's response omits is that CLECs presently are *unable* to construct integrated systems even if they choose, as the lack of application-to-application interfaces for pre-ordering—essential components for that task—prevents them from being able to integrate these functions.

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While BellSouth still provides ordering capability through LENS, BellSouth states that "[t]he LENS ordering interface is limited to a subset of the order types and activity types provided by the EDI interface," and "BellSouth recommends the industry-standard EDI interface for local exchange ordering." Stacy OSS Aff. ¶ 56; *see also id.* ¶ 46. This suggests that the use of LENS for both pre-ordering and ordering will be a less common situation.

## 2. *Lack of Parity in Particular Functions*

In addition to the problems arising from the lack of an application-to-application interface, BellSouth's pre-ordering interface fails to meet the necessary standards because LENS does not offer parity with BellSouth's retail operation. While the comments cite numerous deficiencies, we here focus on two: access to telephone numbers and service installation dates. When a customer calls to negotiate service, two pieces of information that the customer will want to determine right away are when service will be available and what the new telephone number will be. Accordingly, the failure to provide this information on a non-discriminatory basis is quite significant from an end user's perspective. We also address address validation.

### (1) Access to Telephone Numbers

BellSouth states that it restricts the number of telephone numbers that a CLEC can reserve in a central office at any one time to 100 numbers or 5% of the numbers available in that office, whichever is less. Stacy OSS Aff. ¶ 25. BellSouth does not apply the same restrictions to itself, the largest user of telephone numbers. Beyond this obvious lack of parity, the restriction may deprive CLECs a meaningful opportunity to compete. With such limitations in place, it appears that it could be quite difficult, if not infeasible, for a CLEC to reserve numbers and place orders in competitively significant numbers.<sup>21</sup> In light of these restrictions, it is not clear that it would be feasible for a CLEC to conduct a heavy telemarketing campaign, for example, in a focused area.

AT&T indicates that there are two other related policies that negatively affect CLECs that place orders using EDI—the method BellSouth recommends—and not LENS. First, a telephone number viewed using LENS inquiry mode is marked “reserved” and will count against the limit for

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For example, AT&T states that these limits place significant burdens on its ability to handle large business orders involving numerous lines or to place high volumes of orders on a daily basis in particular areas. AT&T Bradbury Aff. ¶¶ 62, 65.

twenty-four hours. Second, other than the expiration of the twenty-four-hour period, numbers are taken off the “reserved” list only when they are “selected” in conjunction with an order. Telephone numbers for orders submitted via EDI are not switched to “selected” status until the EDI order reaches BellSouth’s Service Order Control System (SOCS) system,<sup>22</sup> which processes the order. AT&T Bradbury Aff. ¶¶ 66-67. The problem is compounded for CLECs that submit orders via EDI, as BellSouth recommends, Stacy OSS Aff. ¶¶ 46, 56. Between the submission of an order and its processing by SOCS, numbers that have been selected are still marked “reserved” and thus are counted against the CLEC’s limit. This “float” period results in the count of reserved numbers remaining artificially high. The longer the “float,” the worse the effect.<sup>23</sup>

In sum, it appears that a CLEC’s ability to provide competing services could be limited by BellSouth’s policies rather than by the dictates of the marketplace. Accordingly, BellSouth’s policies are contrary to its obligation to provide access to OSS functions on a non-discriminatory basis. We are aware that this issue stems, in part, from the fact that BellSouth is functioning as the interim number administrator, but until a permanent—and neutral—administrator takes over, this issue compromises the nondiscrimination principle set forth in the Act and at the heart of our competitive standard.

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In discussions with the Department, BellSouth has stated that same status is applied to telephone numbers reserved for both BellSouth and CLEC orders and that this condition exists until the order reaches SOCS (and associated downstream systems). However, it appears that this will have a greater affect on CLEC orders submitted via EDI because of delays in processing EDI orders, including the manual handling of orders that results from lack of flow through and from ordering errors, many of which it appears could be prevented if CLECs had full knowledge of BellSouth’s business rules so that they could pre-validate their EDI orders.

The “float” period is extended, and thus the effect of the limitation is compounded, first by BellSouth’s decision not to process orders at its gateway immediately upon the receipt of each order but only at thirty-minute intervals. Stacy OSS Aff. ¶ 62; AT&T Bradbury Aff. ¶¶ 115-17.

Errors in the order will typically cause the order to drop out before reaching SOCS, and thus further extending the “float.” BellSouth’s failure to document and provide to CLECs its internal business rules contributes to the error rate, and its manual handling of rejection notices delay the CLECs ability to correct these errors. Thus, these other factors compound the problem.

(2) Access to Installation Dates

When LENS is used in inquiry mode—and again it should be noted that BellSouth does not recommend the use of LENS for ordering, Stacy OSS Aff. ¶¶ 46, 56, so inquiry mode can be expected to be the typical mode—LENS places numerous limitations on the user. One of many is that LENS will not provide calculated due dates for service installation.

When BellSouth's retail representatives place orders, BellSouth's Direct Order Entry Support Applications Program ("DSAP") analyzes the order, work load, and availability of facilities and then, applying various rules, calculates a due date. The representative can discuss alternative dates with the customer, if necessary, and then reserve a satisfactory due date and schedule and appointment for the customer. *See* AT&T Bradbury Aff. ¶ 50; *see also* Stacy OSS Aff. ¶ 33; *id.* Ex. WNS-52 § 2-27.

CLECs using LENS in inquiry mode do not have equivalent access to DSAP. Instead of access to DSAP's ability to calculate dates, CLECs get only a calendar showing open dates, Stacy OSS Aff. Ex. WNS-52 § 2-28, along with tables of projected service intervals, which correspond to standard intervals for the applicable work center. Moreover, to the extent that the standard intervals assume that a premises visit is required to perform the installation or that the CLEC is unable to determine whether that is so, a correspondingly longer date will result even though premises visits are often not required.<sup>24</sup> These estimated dates are not firm at this point, as BellSouth

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BellSouth states that it was to add Quickservice functionality to LENS in October 1997 that would help determine whether a dispatch would be required. Stacy OSS Aff. ¶47. From this brief reference, one cannot determine whether this change would address the limitations that AT&T describes. One issue is whether this functionality will be available in inquiry mode: if implemented only in firm-order mode, it would not help CLECs using inquiry mode. Moreover, even assuming that this functionality was implemented on schedule, it is not known whether it works properly and is operationally ready.

In discussions with the Department, BellSouth has stated that, through Quickservice and otherwise, it

(continued...)



acknowledges, stating that “the LENS preordering query will provide information to discuss *probable installation intervals*,” Stacy OSS Aff. Ex. WNS-52 § 2-28 (emphasis added). Actual due dates are assigned only after BellSouth processes the service order, and by that point, the due date originally estimated might no longer be available.<sup>25</sup> Further, the CLEC does not get the actual due date until it receives the Firm Order Confirmation (“FOC”) for the order. BellSouth’s commitment for providing FOCs is twenty-four hours from the time an order is placed. Thus, for the 80% of orders that BellSouth estimates will be submitted via EDI, not only will the CLECs be unable to provide their customers with firm due dates on the original telephone call, they will often be unable to provide due dates the same day. This denies such CLECs non-discriminatory access to installation dates. *See generally* AT&T Bradbury Aff. ¶¶ 51-55; MCI King Decl. ¶¶ 70-76.

### (3) Address Validation

An additional limitation when LENS is used in inquiry mode is that, when the customer has no existing service,<sup>26</sup> the LENS user must perform an address validation prior to *each* pre-ordering function. For example, if a CLEC user needs to reserve a telephone number and schedule an

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(...continued)

now provides CLECs with information through which they can apply the same rules that DSAP applies in a mechanized way and thus reach the same result. Even assuming that is so, this still fails the requirement that “[f]or those functions that the BOC itself accesses electronically, the BOC must provide equivalent electronic access for competing carriers,” *Michigan Order* ¶ 137, for CLECs must derive these dates manually.

In discussions with the Department, BellSouth has stated that neither BellSouth nor CLEC orders have final, *i.e.*, guaranteed dates, prior to the order being processed through SOCS. However, it appears that this will have a greater affect on CLEC orders submitted via EDI because of delays in processing EDI orders, including the manual handling of orders that results from lack of flow through and from ordering errors, many of which it appears could be prevented if CLECs had full knowledge of BellSouth’s business rules so that they could pre-validate their EDI orders.

In discussions with the Department, BellSouth has stated that the pre-ordering functions can be accessed by both street address and telephone number. Thus, when the customer has existing telephone service, a single piece of data, the telephone number, can be entered each time instead of the longer street address, city, and state entries. But even then, because the same data must be re-entered to access each pre-ordering function, there is still a lack of parity.

installation date, the user would have to validate the address, reserve the telephone number, and then re-validate the same address again before scheduling the installation date. Performing four pre-ordering functions for a single order would require that the same address be entered and validated four times. The system used by BellSouth retail representatives requires an address to be validated only once in the order negotiation process, not once for every pre-ordering function.

In attempting to justify this arrangement, BellSouth make several arguments. BellSouth argues that inquiry mode includes address validation since it is a necessary input to other pre-ordering functions. Stacy OSS Aff. ¶ 19. Yet BellSouth does not explain why this need for a valid address requires that the validation process be performed repeatedly during a series of sequential pre-ordering functions involving the same address. For example, some mechanism that saved the validated address from one pre-ordering function to the next (until the user indicated that a function for a new address was desired) would offer functionality like BellSouth's own systems, which validate an address once and use that validated address throughout the transaction.

BellSouth also states that this does not have a negative impact on CLECs' ability to obtain pre-ordering information and that having such an inquiry mode is not present in the BellSouth interface RNS so that the CLECs actually have "an extra benefit." Stacy OSS Aff. ¶ 19. BellSouth does not explain how a process that, for no apparent necessary reason, can nearly double the number of steps to accomplish the same result can fail to have a negative impact: obviously, even if CLECs can ultimately get the same information and accomplish the same tasks,<sup>27</sup> it will take them substantially longer to reach the same result. But BellSouth goes beyond this and contends that this

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This should not be assumed, for it appears that these additional address validations constitute transactions that will (a) increase the load on the system, potentially slowing performance, and (b) count against LENS total capacity and thus lower LENS effective capacity. Capacity issues are discussed below.

slower, less-efficient process provides a benefit that its own employees do not have, ignoring that BellSouth's integrated systems for pre-ordering and ordering render this mode superfluous.<sup>28</sup>

### 3. *Ordering & Provisioning*

As the Department has previously observed, the wholesale support processes that BOCs provide for ordering and provisioning are the most critical processes that the BOCs must put in place, for it is through those processes that the CLECs enter local exchange markets and begin to serve customers.<sup>29</sup> In this section, we discuss functional limitations and designed capacity. We conclude with an analysis of BellSouth's PC-EDI concept.

#### a. *Functionality*

Because the OSS functions supporting the ordering and provisioning of resale service have retail analogs, *Michigan Order* ¶ 140, the access to those functions that a BOC provides to CLECs must be "equal to the level of access that the BOC provides to itself, its customers or its affiliates, in terms of quality, accuracy and timeliness," *id.* ¶ 139, and "[f]or those functions that the BOC itself accesses electronically, the BOC must provide equivalent electronic access for competing carriers," *id.* ¶ 137.<sup>30</sup> Accordingly, based on a straight-forward application of these principles, in the resale context a BOC must provide CLECs with support for (a) equivalent electronic ordering of all services that the BOC's retail representatives can order electronically, (b) equivalent electronic processing of those orders, including "flow-through" for all order types for which the BOC's retail

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An additional issue involving address validation is the acknowledged omission in LENS of driving instructions for unnumbered addresses, which is available in BellSouth's internal RNS system. *See* Stacy OSS Aff. ¶ 18. While arguing that this disparity does not deprive CLECs of a meaningful opportunity to compete, BellSouth makes no attempt to address the obvious parity issue.

DOJ Oklahoma Evaluation, App. A at 71-72.

*See also* DOJ Oklahoma Evaluation, App. A at 71 ("at a minimum the Department expects BOC automation of processing steps in instances where a BOC electronically processes substantially analogous steps for its own retail operations"); *id.* at 80.

service orders have flow-through, (c) equivalent electronic return of like status messages, including firm order confirmations (“FOCs”), order rejections, jeopardy notifications, and order-completion notifications, and (d) equivalent electronic ability to query and view pending orders and related status information. As discussed below, BellSouth does not do so, and thus BellSouth is not providing non-discriminatory access to ordering and provisioning functions.

First, BellSouth currently offers a standards-based application-to-application EDI interface<sup>31</sup> for ordering.<sup>32</sup> However, that interface presently supports the ordering of only business and residential POTS, PBX trunks, and DID trunks, not all of the services that BellSouth retail representatives can order electronically. AT&T Bradbury Aff. ¶ 99, 113. Additional functionality is being added in phases, but in the interim, resale and UNE orders not supported by EDI are processed manually by submitting them to BellSouth via facsimile or mail. Stacy OSS Aff. Ex. WNS-52 §§ 3-06, 3-16.

Second, BellSouth’s ordering and provisions systems are providing flow-through on only a low proportion of those types of orders that are currently supported. BellSouth states that it provides mechanized order generation on services representing the vast majority of BellSouth’s retail revenues, BellSouth Brief at 28; Stacy OSS Aff. ¶ 58, but this does not compare mechanized

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BellSouth states that it is committed to implementing the most recent EDI-based standard released by ATIS. Stacy OSS Aff. ¶ 50. We commend, in this regard, Bell South’s commitment to adhere to any future industry standards addressing OSS standards.

Although BellSouth provides ordering capability through LENS, BellSouth continues to de-emphasize that capability:

During many state proceedings, the competitive carriers’ testimony has criticized the *ordering* capabilities of LENS. The primary function of LENS is *pre-ordering*. Non-discriminatory access for ordering is supplied by the industry-standard [EDI and EXACT] interfaces. BellSouth, along with the industry, recommends EDI for local exchange ordering.

Stacy OSS Aff. ¶ 46 (emphasis in original). BellSouth is not relying on LENS’ ordering functions to fulfill its checklist obligations, BellSouth Brief at 27 (“not an aspect of BellSouth’s provision of nondiscriminatory access under the requirements of the Act”), thus those functions are not discussed in this analysis.

order generation for CLECs and for BellSouth's retail operations and thus would not support a finding of parity. Moreover, AT&T cites flow-through figures in the range of 26.2% and 33.7% of EDI and LENS orders for July and August 1997, respectively. AT&T Bradbury Aff. ¶ 106.<sup>33</sup> The remaining CLEC orders drop out of the system and are processed manually. In contrast, the Department understands that no less than 97% of BellSouth's residential orders and 81% of its business orders flow through.

While orders may be processed handled manually in some circumstances, for reasons the Department and the Commission discussed in detail with regard to Ameritech's Michigan application,<sup>34</sup> the high proportion of orders being handled manually at this point is a significant concern. As explained below with regard to Operational Readiness, the total volume of orders has been low to this point. BellSouth has not demonstrated that the manual handling of these orders will not delay the processing of these orders in a discriminatory way once the volumes of orders increase, as has occurred with other carriers.

Third, even for orders submitted electronically, order rejections due to violations of BellSouth's business rules, as well as jeopardy notifications, do not flow back to the CLEC electronically: they dropout and are handled manually, typically sent back to the CLEC via fax. *See* Stacy OSS Aff. ¶ 77. BellSouth states that an electronic error response capability is being developed

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Even accepting BellSouth's adjustments that seek to eliminate the effect of errors that it attributes to the CLECs, BellSouth projects that flow through for July would have been only 53%. Stacy OSS Aff. ¶ 112. The unadjusted flow-through figure is worse. *Id.* Ex. WNS-41 (confidential exhibit). While BellSouth's August figures suggest that flow-through improved that month, it does not appear that the numbers are yet as good as those for BellSouth's retail side. In any event, there is still an insufficient track record to justify a conclusion that the systems are operationally ready.

*See generally* DOJ Michigan Evaluation, App. A at 14-16; *Michigan Order* ¶¶ 172-99.

and presently “is scheduled for first quarter 1998.” *Id.* ¶ 75.<sup>35</sup> In the mean time, this manual handling at BellSouth’s end, as well as the manual handling required at the CLEC end because of the communication via facsimile, can cause significant delays in the handling of CLEC orders and is also prone to error.<sup>36</sup> Fundamentally, this does not provide parity with BellSouth retail operations.

b. *PC-EDI Concept*

On the positive side, the Department is encouraged by BellSouth’s work with an independent software vendor to develop an inexpensive, PC-compatible software package that is compatible with BellSouth’s EDI interface. Stacy OSS Aff. ¶ 53. BellSouth states that it undertook this work “[t]o assist CLECs of all sizes that want to use EDI without extensive development effort on their side of the EDI interface” and that the software “is readily available to even the smallest CLEC.” *Id.*

The Department supports this concept, which leverages existing application-to-application interfaces and makes them available to additional CLECs.<sup>37</sup> The Department recognizes that such

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It is not stated exactly what is scheduled for first quarter 1998, internal testing, carrier-to-carrier testing, or final implementation.

On BellSouth’s end, the order sits in a queue waiting for a BellSouth LCSC service representative to pull the order from the queue and review it. Stacy OSS Aff. ¶ 76. The representative must then manually prepare a notification describing the error or other problem and fax it to the CLEC. Commentors note that the accuracy and comprehensiveness of these messages can vary widely and that unclear or even erroneous messages can further contribute to the delay.

On the CLEC’s end, additional manual steps are required. To prevent further adding to the delay, CLEC personnel must continually monitor the fax machine. Once a fax arrives, it will have to be handled manually, routed back to the appropriate personnel, and tied back to the original CLEC order. These manual processes undermine the CLEC’s efforts to automate its processes in the first instance and pose a significant disadvantage in the ordering process.

The Department lacks sufficient information about the existing BellSouth/Harbinger PC-EDI software and exactly how it interfaces with BellSouth’s systems to determine how closely the present implementation of this approach tracks the concept. Accordingly, the Department’s support for this concept should not be construed as a corresponding conclusion on BellSouth’s implementation of this concept or on the PC-EDI software itself.

Information in the present record indicates that there are differences in EDI order functionality and handling depending whether they are sent using PC-EDI. *See* AT&T Bradbury Aff. at 51 n.60 (Phase II EDI functionality is presently available only when using PC-EDI software); Stacy OSS Aff. ¶ 62 (normal EDI  
(continued...))

software basically provides a terminal interface to the CLEC users, and thus such software is not useable by CLECs wishing to tie into their own internal OSSs. Thus, the development and use of such software does not necessarily test the ability of CLECs to automate their end of an application-to-application interface with the BOCs. But that is not the proper goal or use of such software. Rather this concept focuses on CLECs that do not have or choose not to tie into their own internal OSSs. The Department and the Commission have each recognized that CLECs will have varying needs with respect to OSS access functionality, based largely on the degree to which each CLEC deploys its own internal OSSs, and that BOCs need to support those varying needs.<sup>38</sup> This approach can help meet those CLEC needs and BOC obligations in a way that benefits both CLECs and BOCs.

BOCs can benefit from this approach because it builds on existing application-to-application interfaces and thus can reduce the number of interfaces that a BOC needs to support to provide non-discriminatory access to OSS functions to all CLECs. By reducing the number of interfaces that it develops, tests, and maintains, the BOC can, with the same resources, implement and improve its remaining interfaces more quickly. As an illustration, BellSouth's existing LENS interface provides electronic ordering capability only for "a subset of the order types and activity types provided by the EDI interface," Stacy OSS Aff. ¶ 56. PC-EDI-type software that fully supported all EDI ordering functionality would allow *any* CLEC to place *all* such EDI order types without needing to

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(...continued)

orders held in queue and processed in thirty-minute intervals; PC-EDI orders may be put in queue or sent immediately).

This suggests that BellSouth presently may be using a different interface at its end for receiving and initially processing PC-EDI orders. Such differences could prevent some of the potential benefits from being realized, but that would be only for this implementation and would not undercut the desirability of the underlying concept.

*See, e.g.,* DOJ Oklahoma Evaluation, App. A at 74-76; DOJ Michigan Evaluation, App. A at 22; *Michigan Order* ¶ 220.

incur the time and expense of developing its own EDI-compatible software. If such software could also access pre-ordering functions on an automated basis, it could obviate the need for LENS altogether.

Certain CLECs can also benefit from such PC-EDI-type software. If such software is implemented with all the functionality of the underlying BOC application-to-application interface, CLECs will be able to choose the option that best fits its other business needs without having to potentially trade off the ability to access certain transaction types. Moreover, such software has the potential, if combined with integrated support for an application-to-application pre-ordering interface, to provide even the smallest CLEC with an integrated pre-ordering/ordering environment equivalent to that presently used by BellSouth's retail representatives. That is obviously a desirable objective.

#### 4. *Support & Documentation*

The Department concludes that BellSouth is not providing adequate support and documentation to competing carriers, and the lack of adequate documentation and support preclude a finding that BellSouth "is adequately assisting competing carriers to understand how to implement and use all of the OSS functions available to them." *Michigan Order* ¶ 136. One of the worst problems is BellSouth's failure to adequately disclose to competing carriers the internal editing and data formatting requirements and the business rules necessary for orders to be accepted, not only at the BellSouth gateway, but also by BellSouth internal OSSs.<sup>39</sup> The critical nature of access to OSS functions for ordering makes this a major problem, for it prevents CLECs from pre-validating their orders to ensure that they will be accepted by BellSouth's systems. Other examples discussed in the comments include (1) the lack of specifications needed to develop an application-to-application

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*See, e.g.,* AT&T Bradbury Aff. ¶¶ 144-53.



interface to LENS for accessing pre-ordering functions, something BellSouth represents to the Commission as both possible and available<sup>40</sup>; (2) insufficient training on LENS; (3) significant errors in documentation that is provided; (4) out-of-date documentation; and (5) the lack of change management processes to notify CLECs in advance of changes that will be made to BellSouth systems.

Under these circumstances, where adequate documentation and support appear to be lacking, general references to CLEC errors as a major factors in problems such as high rejection rates and lack of flow through, *see, e.g.*, Stacy OSS Aff. ¶ 111-12, Stacy Performance Aff. ¶ 51, are unconvincing. The Department recognizes that CLECs have errors and may be negligent in their efforts to reduce errors. However, to simply attribute a certain portion of total errors to the CLEC, as BellSouth has done,<sup>41</sup> does not allow the Department and the Commission to independently judge what proportion of the errors are attributable solely to CLEC failures and what proportion could have been prevented if BellSouth were providing adequate documentation and support. Since the BOCs are obligated to provide adequate documentation and support and because the lack of such documentation and support totally undermines the ability of CLECs to prevent errors, BOC claims of “CLEC errors” should not be heard so long as OSS documentation and support is inadequate. Rather, we would expect BellSouth to justify its support for its wholesale functions or to improve its support services so that they are adequate.

### C. Operational Readiness

As discussed further below, the Department concludes that BellSouth’s systems presently have limited capacity and have not been proven effective for handling large, competitively

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*See* BellSouth Brief at 26; Stacy OSS Aff. ¶ 43-44. *But see* AT&T Bradbury Aff. ¶¶ 32-45 (citing contrary BellSouth testimony before state public service commissions). This is discussed further below.

*See, e.g.*, Stacy OSS Aff. ¶¶ 111-12, Ex. WNS-41 (confidential exhibit).

significant volumes of demand. Past experience suggests that limited commercial use at small volumes does not provide an adequate basis upon which to judge the performance of systems that will need to handle a much larger volume of orders.

System capacity is a critical component of operational readiness. On the issue of capacity, the Department has previously stated that a BOC must show that its systems “allow competitors to serve customers . . . in reasonably foreseeable quantities, or that its [systems] are scalable to such quantities as demand increases.” DOJ Oklahoma Evaluation at 29. The Department explained that “reasonably foreseeable [meant] those quantities that competitors collectively would ultimately demand in a competitive environment where the level of competition was not constrained by any limitations of the BOC’s interfaces or processes, or by other factors the BOC may influence.” *Id.* The Commission has determined that it “will examine operational evidence to determine whether the OSS functions provided by the BOC to competing carriers are actually handling current demand and will be able to handle *reasonably foreseeable demand volumes*.” *Michigan Order* ¶ 138 (emphasis added).

BellSouth has not demonstrated that its pre-ordering systems are operationally ready. BellSouth represents that it has internally tested LENS to support 160 simulated users.<sup>42</sup> However, the existing capacity appears to be woefully inadequate for either existing<sup>43</sup> or foreseeable demand. Because BellSouth’s OSS operates region wide, the user figures are for the total number of simultaneous users among for all CLECs throughout BellSouth’s region. It would appear that competitively significant marketing efforts would quickly exhaust available capacity.

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Stacy OSS Aff. Ex. WNS-45.

AT&T reports a recent incident in which less than half of sixty users could adequately use LENS. AT&T Bradbury Aff. ¶ 258; *see also id.* ¶¶259-61; MCI King Decl. ¶ 86. If the total number of LENS users at that point in time was no greater than 160, this suggests that BellSouth’s testing was flawed. If the total number was greater than 160, then usage has already exceeded tested capacity.

Neither has BellSouth demonstrated that its ordering systems are operationally ready, especially in light of the manual processes involved. BellSouth states that it received and processed only about 5,000 orders region wide in August. This total volume is only a fraction of the volume at which Pacific Bell and Ameritech systems failed due to their reliance on manual processing,<sup>44</sup> and BellSouth has experienced major problems with errors at even this low volume.<sup>45</sup>

If one considers foreseeable volumes, the situation is even more problematic. According to BellSouth's October 20, 1997, 8-K filing with the SEC, BellSouth currently has nearly 23 million access lines in its region, having added just over 1 million access lines in the last year. Using the PIC change measure described in the Michigan order, one would estimate that there are about 17,000 PIC changes per business day in BellSouth's region.<sup>46</sup> A survey recently reported in *Communications Daily* stated that nearly 20% of residential customers would change, and an additional 17% would consider changing, local carriers; if one assumes that at least a similar proportion of business customers will change local carriers, one could estimate from this an average

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*See MCI v. PacBell*, Cal. PUC No. 96-12-026 (Sept. 24, 1997), at 27, 29 (finding that MCI ceased marketing after PacBell built up backlogs of 4,000 to 5,000 orders and that, by PacBell's own admission, its systems did not offer their competitors resold services at parity).

For example, LCI states:

In the brief time that LCI has been using BellSouth's EDI interface for ordering and provisioning, LCI has encountered excessive delays in the receipt of firm order confirmations; excessive delays in the provisioning of orders; manual processing of orders that should flow-through electronically to BellSouth's OSS; orders that have been "lost" in BellSouth's system; and substantial delays in obtaining resolution of problems due to the lack of sufficient personnel who have been adequately trained in EDI applications.

LCI Comments at ii; *see also id.* at 4-5 (for example, it has taken an average of seven days for LCI to receive FOCs).

*Michigan Order* n. 494. This calculation is based on the total number of access lines in BellSouth's region and uses the figure cited in the Michigan order of at least 30 million PIC changes per year. *Id.*

of roughly 18,400 to 33,600 lines per business day changing region wide.<sup>47</sup> Finally, the one million access lines BellSouth added in the last year would translate to roughly 4,000 access lines added per business day. In a competitive environment, BellSouth will experience far greater order volumes than it is presently projecting. Moreover, as the Department and FCC have previously recognized, in sizing its systems, BellSouth cannot depend on uniform volumes but must account for, and be prepared to handle, variations in daily ordering volumes, and even significant spikes.<sup>48</sup> BellSouth has not demonstrated, either through actual commercial usage or even with other (less reliable) evidence such as internal testing with high volumes of test orders or third-party audits, that it can and will be able to do so.

The Commission has stated that “[a] BOC must ensure that its operations support systems are designed to accommodate both current demand and projected demand of competing carriers for access to OSS functions.” *Michigan Order* ¶ 137. BellSouth states that has designed the capacity of its ordering systems based on CLEC forecasts. Stacy OSS Aff. ¶ 120. BellSouth provides projected volumes, Stacy OSS Aff. Ex. WNS-43, WNS-44, which its says incorporate available CLEC forecasts, *id.* ¶ 120. But its exhibits provide only the final numbers and do not explain the degree to which those numbers rely on CLEC forecasts or even what those forecasts are. This undercuts the Department’s ability to judge the adequacy of BellSouth’s showing on this point.

Finally, we are concerned that CLEC forecasts may be “constrained by . . . limitations of the BOC’s interfaces or processes,” DOJ Oklahoma Evaluation at 29, or by other impediments to competition, including those discussed in the Department’s evaluation of this application. A BOC’s

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“Telco-Cable,” *Communications Daily*, Oct. 28, 1997.

*See Michigan Order* ¶ 199; DOJ Michigan Evaluation, App. A at 15-16.

wholesale support capacity should be measured against likely demand in a market that is otherwise fully open to competition.

### **III. Performance Measures**

Performance benchmarks are important both for demonstrating that the market is currently open to competition and for facilitating meaningful post-entry oversight that ensures that the market opening is irreversible. The BOCs must therefore define the relevant measures, gather and report the appropriate data on a regular basis, and derive the applicable benchmarks from the performance so measured. While BellSouth has made several commendable commitments with regard to gathering and storing performance data, BellSouth's proposed permanent performance measurements<sup>49</sup> are deficient. BellSouth omits numerous critical measurements—measurements as fundamental as average installation intervals, for example—and these omissions preclude “a determination of parity or adequacy in the provision of resale or UNE products and services to CLEC's in the state of South Carolina.” *Friduss SC Aff.* ¶ 78.

#### **A. System Architecture and Design**

BellSouth has made several important commitments with regard to gathering and maintaining performance data. First, BellSouth's existing legacy OSSs run on multiple mainframe computers. BellSouth states that “[t]he query systems on [these] computers are not flexible and cannot be easily manipulated to produce the measurements required to monitor parity between retail

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Of the three categories of performance measurements that BellSouth discusses—initial measurements, AT&T measurements, and permanent measurements, *see* Stacy Performance Aff. ¶ 16—the permanent measurements are by far the most significant. Based on discussions with BellSouth, the Department understands that it is only these permanent measurements that BellSouth is committing to regularly produce on an ongoing basis for CLECs and regulatory authorities. As stated above, one important purpose of performance measurements is to detect backsliding and thus facilitate meaningful post-entry oversight that ensures that the market opening is irreversible. The Department sees no basis for concluding that performance measurements not regularly produced and generally available on an ongoing basis will serve this important function.

and wholesale customers.” Stacy Performance Aff. ¶ 13. To overcome these limitations and “enable effective ongoing production of measurements which monitor parity and provide meaningful data on a readily available basis,” BellSouth has implemented a data warehouse, separate from the mainframe computers on which its OSSs run, in which raw data relating to performance can be stored and through which it can be queried to produce performance measurements. *Id.* ¶¶ 13, 14. The flexibility that can result from this type of architecture should make it easier for BellSouth to develop, maintain, and provide effective performance measurements.

Second, BellSouth states that it is capturing and storing in the data warehouse for subsequent analysis “[e]very order processed by BellSouth for both its retail units and its CLEC customers.” *Id.* ¶ 14. The use of sampling can result in numerous disputes as to the statistical validity and thus the adequacy of the sampling technique, and poor sampling techniques can readily distort the view of the performance being measured. Therefore, storing data for all orders is obviously a more desirable approach than storing data for only a limited sample of orders.<sup>50</sup>

Third, BellSouth states that it plans to allow CLECs to directly access the data warehouse to perform their own analyses. *Id.* ¶ 15. BellSouth has not described exactly how CLECs would access the data warehouse or what types of data each CLEC would be able to access. Allowing a CLEC to access, not only data relating to itself, but also summary CLEC data and summary BellSouth data could provide CLECs a flexible tool for generating their own performance measures.

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BellSouth has not, however, described what data it will track other than for orders. More generally, BellSouth has not listed the data elements that are being stored in the data warehouse. As a result the Department cannot ascertain exactly what performance measures BellSouth will be able to support using the data maintained in its data warehouse and thus cannot judge the adequacy of BellSouth’s implementation of the data warehouse. The Department encourages BellSouth, as well as other BOCs that implement a data warehouse for performance measures, to identify and describe in future applications the complete list of data elements stored in such data warehouses.

The greater degree of disaggregation that the data warehouse will support, *see* Friduss SC Aff. ¶¶ 31-34, the more powerful and useful this tool will be.

BellSouth is to be commended for committing itself to such a system for gathering, storing, and providing access to performance data. While the information that BellSouth has provided is not sufficient to judge the status or the adequacy of its implementation, BellSouth's approach is clearly a desirable one, and the Department strongly supports these commitments. We urge other BOCs to adopt a similar approach.

B. Actual Installation Intervals

Notwithstanding this desirable architecture, BellSouth's proposed permanent performance measurements fall considerably short of what is needed. Most significantly, BellSouth is not providing actual installation intervals, instead relying on a measurement of the percentage of provisioning appointments met. As described below, the Department and the Commission have previously determined that this measurement is an inadequate substitute. For this reason alone, BellSouth has failed to satisfy its evidentiary burden to "demonstrate that it is provisioning resale orders within the same average installation interval as that achieved by its retail operations." *Michigan Order* ¶ 166.

As the Department and the Commission have previously concluded, "[p]roviding resale services in substantially the same time as analogous retail services is probably the most fundamental parity requirement in Section 251."<sup>51</sup> In discussing this issue, the Commission has explained that an ILEC that "to a significant extent, [processes] retail orders for itself more quickly than it is processing resale orders for competitive carriers . . . would not be meeting its obligation to provide equivalent access to those OSS functions" and that average installation intervals are critical to

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DOJ Michigan Evaluation at A-12, quoted with approval in *Michigan Order* ¶ 167.

determining whether nondiscriminatory access is being provided. *Michigan Order* ¶ 167, 168.

Accordingly, in the Michigan Order, the Commission concluded:

[W]e find that submission of data showing average installation intervals is fundamental to demonstrating that Ameritech is providing nondiscriminatory access to OSS functions. Such data is direct evidence of whether it takes the same time to complete installations for competing carriers as it does for Ameritech, which is integral to the concept of equivalent access. By failing to provide such data in this application, Ameritech has failed to meet its evidentiary burden.

*Michigan Order* ¶ 171. The same reasoning applies equally to BellSouth and yields an identical conclusion with respect to BellSouth's current application.

Contrary to BellSouth's assertions, Stacy Performance Aff. ¶ 52, a measurement of the percentage of provisioning appointments met does not adequately describe BellSouth's performance: it does not permit direct comparisons to BellSouth's retail performance and thus is not sufficient to demonstrate parity, even if when combined with data demonstrating that provisioning appointments are being assigned on a non-discriminatory basis.<sup>52</sup> Fundamentally, a report that shows the side of the line on which an order falls, either met or missed, does not reveal where it is in the range.<sup>53</sup> As to provisioning appointments met, if all CLEC customers receive service on the due date while all BellSouth retail customers receive service in half the scheduled time, then a report of provisioning appointments met will show parity of performance, not revealing the discriminatory difference in performance between BellSouth and the CLEC. Likewise, as to provisioning appointments missed, if all BellSouth retail customers receive service after one additional day while all CLEC customers

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While BellSouth purports to provide "data on actual intervals for provisioning various services," Stacy Performance Aff. ¶ 52, an examination of the data cited, Exhibit WNS-10 to that affidavit quickly reveals that is not the case. The charts are clearly labeled "Issue to Original Due Date Intervals" or "Issue to Due Date Average Interval." At best, due date intervals can show that BellSouth is assigning due dates to CLECs and itself on a non-discriminatory basis. While this is important, this is not the same as an installation interval.

The difference is similar to whether a college course is graded with a letter grade such as A, B, C, D, or F or merely on a pass/fail basis. Pass/fail grades do not reveal where passing students stand with respect to one another in the class.



receive service after five additional days, then a report of provisioning appointments met will again show parity of performance and fail to reveal the discriminatory difference.

C. Other Missing Measures

As described in the Friduss affidavit, BellSouth's permanent performance measures are missing numerous other significant measurements. For example, BellSouth has no measurements for pre-ordering functions, and it has few measurements for ordering functions. Other significant missing significant measurements include Service Order Quality, Orders Held for Facilities; Billing Timeliness, Accuracy, and Completeness; and 911 Database Update Timeliness and Accuracy.<sup>54</sup> Thus, BellSouth has yet to establish sufficient performance measurements to satisfy the Department's competitive assessment.<sup>55</sup>

Notably, a number of these missing elements are among those listed in the Michigan Order as necessary parts of a BOC's evidentiary showing. The Commission found that Ameritech had failed to meet its "fundamental duty with regard to the evidentiary burden required to demonstrate that it is providing nondiscriminatory access to all OSS functions," *Michigan Order* ¶ 204, and concluded:

[I]n order to provide us with the appropriate empirical evidence upon which we could determine whether Ameritech is providing nondiscriminatory access to OSS functions, Ameritech should provide, as part of a subsequent section 271 application, the following performance data, in addition to the data that it provided in this application: (1) average installation intervals for

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In discussions with the Department, BellSouth has indicated that some omitted measurements are under consideration but have not yet been adequately defined at this point. In this regard, the Department reiterates that for performance reports to be meaningful and useful, the relevant measures must be specifically and clearly defined. Without such definition, the reports will be meaningless if not actually misleading to a CLEC or regulator. "For example, cycle-time performance measures are dependent on the specific definition of start and stop times, while reliability measures are dependent on the specific definition of what constitutes a failure." Friduss SC Aff. ¶ 23.

As we have noted previously, we are open to considering alternate measures for assessing wholesale performance; we are not, however, able to conclude that a local market has been fully and irreversibly opened unless the important indicators of wholesale performance are being measured and reported on a regular basis.

resale; (2) average installation intervals for loops; (3) comparative performance information for unbundled network elements; (4) service order accuracy and percent flow through; (5) held orders and provisioning accuracy; (6) bill quality and accuracy; and (7) repeat trouble reports for unbundled network elements.

*Michigan Order* ¶ 212 (footnotes omitted). As stated above with respect to average installation intervals, the Commission's reasoning on these other performance measurements applies equally to BellSouth, and thus the omission of these measurements warrants an identical conclusion with respect to the inadequacy of this application.