high as $185, the expense alone clearly prohibits competitive LECs from providing switch-based service on a profitable basis.

But there are substantial problems in hot-cut performance as well. First, as Z-Tel explains at length in its comments, the incumbent LECs cannot perform hot cuts in sufficient quantities to sustain competitive self-provisioning, because (1) performing manual hot cuts is a highly labor-intensive process that requires highly trained personnel, and (2) there is a limit to how many hot cuts can be performed at any one time on a single main distribution frame.[476] The New York Department of Public Service (NYDPS) points out that Verizon provisioned an average of 205,000 orders per month via UNE-P in 2000 and 2001, compared to only about 4,700 hot cut orders per month.[477] Until hot cuts can be performed in much greater volume, the NYDPS notes, the competitive LECs' lack of access to UNE-P would materially diminish their ability to provide local service.[478] The NYDPS further explains that, at the present rate of hot cuts, it would take over 11 years to switch current UNE-P customers to UNE-loop.[479] And even to process monthly UNE-P order volumes as UNE-loop orders, Verizon would have to increase its hot-cut processing by approximately 4400 percent.[480]

Second, the hot cuts that the incumbent LECs do perform still involve substantial delay and disruption. Z-Tel points out that hot cuts, which generally take days to complete, often result in "complete loss of service, disconnection of calls already

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[476] Z-Tel Comments at 38-43.

[477] *Id.* at 4.

[478] New York Department of Public Service Comments at 3.

[479] *Id.* at 4 n.18.

[480] *Id.* at 4.

underway, and the possibility that inbound calls will not be successfully routed to the customer."[481] These disruptions are quite common, occurring quite possibly in more than 25% of hot cuts.[482] Few customers are likely to tolerate such disruptions in order to migrate to competitive LEC service.

Just as the BOCs attempt to diminish the significance of the problems associated with manual hot cuts and switch deployment, so do they attempt to diminish the significance of the costs of collocation. To be sure, they cite impressive-sounding statistics, asserting, for example, that competitive LECs are now collocated in central offices that serve 81% of all BOC access lines, including 79% of all residential lines.[483] But on closer examination, these statistics say little about the barriers that competitive LECs face providing service to residential and small business customers via collocation arrangements. These statistics do not indicate that any of the competitive LECs that have such collocation arrangements are collocating profitably or sustainably, for example, or even that they are using their collocation arrangements to serve residential or small business customers. As the Bryant Declaration shows, a competitive LEC providing service via UNE-loops at a particular central office faces huge cost disadvantages from transport and collocation unless it captures a very high share of customers. Presumably that is why many of the switch-based competitors have gone out of business.

The BOC statistics also do not indicate that any more than one competitive LEC has collocated in any given central office – or that the number of collocations that exist is

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[481] Z-Tel Comments at 45.

[482] *Id.* at 25-26.

[483] SBC Comments at 75; BOC Report at II-16, Table II-10.

large enough to serve a significant fraction of residential or small business customers. For a competitor to serve the mass market using a UNE-loop strategy, that particular competitive LEC would have to be collocated at *every* central office. If other competitors were collocated at a particular central office, that particular competitive LEC would still face all of the diseconomies of scale of itself collocating at the central office.

Even where a competitive LEC is collocated at a particular central office, it would generally have to sustain significant additional costs to serve residential and small business customers – if it could do so at all. While large businesses generally use digital technology, residential and small-business customers often use copper loops that require the installation of additional equipment in the central office to transport. This gap in technology prevents competitive LECs from simply leveraging collocations that serve large businesses to serve residential and small business customers. Moreover, a competitive LEC that is using all of its collocation space to serve large business customers cannot use the same space to serve other customers. Finally, a competitive LEC attempting to serve some of its residential and small business customers via its own switches, while serving the rest via UNE-P, would have to build sophisticated systems and infrastructure to separate the two. Customer service representatives would also have to treat the two sets of customers differently, coordinating hot cuts for the UNE-loop customers but not for the UNE-P customers. Such substantial differentiation inhibits the smooth functioning of competitive LEC operations that is necessary in a mass market environment.

There is no better illustration of the barriers to UNE-loop entry in the residential and small business sectors than the experiences of WorldCom and AT&T. Neither

WorldCom nor AT&T, despite considerable investment in circuit switches, has managed to enter the residential or small business sectors via switch-based service. As WorldCom explains in its initial comments, the problems associated with hot cuts and the economic realities of POTS service have prevented it from offering voice service to small business customers with analog lines even where it is collocated at the incumbent LEC end office serving those customers.[484] Moreover, in many cases, WorldCom is using all of the available space in its collocation cage to serve large business customers and thus could not use that same space to serve mass market customers. And although AT&T made substantial investments in an attempt to serve low-volume business customers outside of very concentrated urban areas via a UNE-loop strategy, it was forced to abandon that strategy after it proved "utterly unworkable" due to the delays and costs associated with the hot-cut process.[485] The costs of backhauling traffic to these switches also proved to be a substantial barrier. The lessons of AT&T's small business strategy apply equally to residential sectors.[486] Experience has led both WorldCom and AT&T to conclude that a UNE-loop strategy cannot be successful at present as a result of the costs and difficulties associated with hot cuts, as well as the need for a sufficient base of mass market local customers, given the economies of scope and scale inherent in transport and collocation.[487]

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[484] WorldCom Comments at 87.

[485] AT&T Comments at 56.

[486] *Id.* at 59.

[487] WorldCom Comments at 35; AT&T Comments at 56-57. None of the BOCs contest that competitive LECs must have access to shared transport where they have access to unbundled switching.

3. There Is No Significant Intermodal Competition in the Residential and Small Business Sectors.

Intermodal alternatives also do not, and cannot, substitute for the availability of UNE-P because they cannot produce anything close to same level of competition in the residential and small business sectors as UNE-P. As the Supreme Court recently stated, the local loop is still largely made of copper wire, and cable and fixed wireless together "constitute less than 1 percent of the total number of reported local-exchange lines in the United States."[488]

Moreover, the Act requires the Commission to take into account whether "the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer."[489] While the Court of Appeals has indicated that the FCC should consider the overall effect on competition of unbundling an element, not just the importance of an element to telecommunications carriers,[490] carriers' need for UNEs remains the central component of the unbundling analysis.[491] Telecommunications carriers such as WorldCom that do not own cable or wireless networks would be impaired in their ability to provide local service without access to UNE-P even if some companies that owned cable or wireless networks were able to compete. In any case, intermodal competition is not today anywhere close to being a viable substitute for UNE-P.

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[488] *Verizon v. FCC*, 122 S. Ct. at 1661, n.10.
[489] 47 U.S.C. § 251(d)(3)(B).
[490] *USTA v. FCC*, 290 F.3d at 429.
[491] 47 U.S.C. § 251(d)(3)(B).

a) Cable Telephony Is Not a Viable Alternative to UNE-P for Mass Market Customers.

To the extent that cable telephony may hold some promise for competition in local exchange services, that promise has not yet materialized. The meager evidence the BOCs are able to marshal in support of their argument that cable telephony is a viable alternative to UNE-P simply underscores how very limited an impact cable telephony has had on the national business for local exchange services. The BOCs note that there are 1.5 million cable subscriber lines in the United States,[492] that 70,000 new subscribers are added each month,[493] and that cable companies offer circuit-switched telephony services to roughly 10 million homes in 20 states.[494] These statistics hardly demonstrate that cable companies have become "potent competitive forces" in local exchange service.[495] One-and-a-half million is not a particularly impressive number when compared to the total number of small business and residential lines in the United States. The fact is that cable subscriber lines account for less than 2 percent of residential and small business access lines.[496]

The minuscule percentage of mass market cable subscriber lines reflects a number of barriers that confront cable operators seeking to enter the business: the high incremental cost of providing cable telephony and uncertainty about potential revenue as a result of the potential for targeted incumbent LEC competitive responses, reduced

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[492] Qwest Comments at 7 (citing BOC Report at II-1, II-11); SBC Comments at 74.
[493] Verizon Comments at 124; SBC Comments at 74; BOC Report at IV-10).
[494] Verizon Comments at 123 (citing BOC Report IV-10).
[495] *Id.*
[496] WorldCom Comments at 35.

second line demand, and falling long distance margins.[497] Cable operators have also hesitated to enter the business because of uncertainty regarding the potential for superior IP telephony technology that may become available in a few years.[498]

The BOCs acknowledge the technological barriers to IP telephony. But they argue that when cable IP telephony is commercially deployed, it will become a competitive alternative in the small business and residential sectors, with as many as 5-7 million subscribers by 2006.[499] Even assuming the BOCs' projections are correct, this would hardly be the basis for eliminating UNE-P today – or even in 2006. Moreover, there is not yet a sufficient basis to conclude that cable IP telephony will become the engine of mass market competition and consumer choice that the BOCs claim it will be. As the HAI Report explains, if and when cable IP telephony is commercially deployed, it may not be the panacea that some claim. First, deploying carrier-class 6 IP telephony equipment throughout a cable system takes time and significant capital investment. Second, a move to packet-switched technology will do nothing to change the revenue pressures that currently deter cable operators from entering the business: as with traditional telephone service providers, cable operators will still face reduced second line demand, falling long distance margins, and the potential for targeted incumbent LEC competitive responses.[500] Moreover, even if cable operators were able to enter the business, their entrance would only convert the BOCs' monopoly into a duopoly, not a competitive marketplace. A duopoly will not drive prices to competitive levels, produce

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[497] HAI Report at 24, 30.

[498] *Id.* at 25.

[499] Verizon Comments at 124; SBC Comments at 74.

[500] HAI Report at 31.

higher-quality telephone service, or, indeed, confer any discernable benefit on mass market customers.[501] In short, duopolistic cable telephone service is simply not the type of competitive alternative that Congress intended when it passed the 1996 Act. The BOCs do not even attempt to show otherwise.

b) Wireless Is Not a Viable Alternative to UNE-P for Mass Market Customers.

Wireless service has no better prospect of becoming a viable alternative to UNE-P-based competition. Once again, the evidence that the BOCs marshal in support of their contention that wireless service is a viable alternative is wholly unimpressive. The BOCs contend that as of the end of 2001, wireless phones had replaced 10 million wireline access lines, and are expected to replace as many as 30 to 35 percent of second and additional wireline access lines by 2005.[502] That hardly indicates that wireless service is a complete substitute for wireline service. Although wireless phones may have replaced a number of second and additional access lines, the fact remains that only approximately 2 to 3 percent of those customers who use wireless phones at all use those phones as their only phone.[503] The Supreme Court thus explained that "the use of wireless technology in local-exchange markets is negligible at present (36,000 lines in the entire nation, less than .02 percent of the total lines)."[504]

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[501] WorldCom Comments at 36-37; Sprint Comments at 12-13.

[502] SBC Comments at 102; BOC Report IV-12 to -13.

[503] The BOC Report states that the number is 3%. BOC Report at IV-13. Even that number is likely overstated. Other studies have shown that only 1.7% of households use wireless phones in place of landline service. HAI Report at 46. *See also* WorldCom initial Comments 37 (citing Yuki Noguchi, *More Cell-Phone Users Cut Ties to Traditional Service*, WASH. POST, Dec. 28, 2001, at E1) (2.2% figure).

[504] *Verizon v. FCC*, 122 S.Ct. at 1667, n.35.

Wireless technology simply does not have the potential to become a substitute for wireline service on a mass scale. As the HAI Report explains, neither existing nor planned wireless technologies are able to serve both the rapidly expanding demand for mobile and portable wireless service and any significant fraction of demand from wireless customers who substitute wireless phones for wireline phones.[505] Wireless providers do not have the network capacity necessary to provide the quantity of service typically demanded by wireline users, who generally generate about three times the busy-hour traffic of mobile wireless users.[506] Moreover, limitations to the coverage, quality, and data rates of wireless service present significant disincentives to customers who might otherwise be tempted to substitute wireless phones for their wireline phones.[507] Once again, the BOCs do not even attempt to show otherwise.

4. UNE-P Is Necessary to Achieve Congress' Goal of Bringing Competition to Residential and Small Business Customers.

Continued availability of UNE-P is critical if the commission is to realize Congress' goal of bringing competition to all telecommunications sectors, including the residential and small business sectors. And, contrary to the BOCs' assertions, achieving that goal need not come at the expense of what they characterize as an "overarching directive to promote facilities-based entry."[508] Indeed, the overwhelming evidence shows that the availability of UNE-P encourages, rather than discourages, facilities investment. The BOCs' view creates an unnecessary tension between the goals of increasing local

[505] HAI Report at 38.
[506] *Id.* at 39.
[507] *Id.* at 38-39.
[508] BellSouth Comments at 72.

competition and promoting facilities investment. The Commission can – and should – serve both goals at once: first, by expanding the reach of competition by narrowing the exceptions to mandatory unbundling and thus enabling competitive LECs to create the consumer base necessary for competitive LECs to make a viable transition to UNE-loop competition, and second, by working to remove the remaining obstacles to competitive LEC facilities investment.

a) The Availability of UNE-P Encourages Facilities Investment.

Despite the clear evidence that competitive LECs cannot serve the residential and small business sectors through any means other than UNE-P, the BOCs repeatedly sound the theme that mandatory unbundling is necessarily a disincentive to investment. The BOCs' recitations of general theories of economic behavior are of little value, and must give way to the substantial empirical evidence that that UNE-P *encourages* rather than discourages facilities investment. As the Supreme Court stated, the argument that allowing competitive LECs access to incumbent LEC unbundled network elements does not produce facilities-based competition plainly "founders on fact."[509]

Overwhelming evidence shows that competitive LECs are more likely to deploy their own switches in areas where unbundled local switching is available on an unrestricted basis. Z-Tel has presented an extensive analysis that indicates that UNE-P availability would increase switch deployment by 19 percent, while restrictions on the availability of UNE-P would decrease competitive LECs' rate of switch deployment.[510] The experiences of both WorldCom and AT&T bear out the results of Z-Tel's study: in

[509] *Verizon v. FCC,* 122 S.Ct. at 1651.

[510] Z-Tel Comments at 80 & and Attachment 9; WorldCom Comments at 88-90.

states in which UNE-P has been available without restriction, both firms have built more switches than they have in states that restrict access to UNE-P.[511] Overall, entrants have invested some $55 billion in facilities since the passage of the Telecommunications Act. As the Supreme Court noted, "a regulatory scheme that can boast such substantial capital spending over a 4-year period is not easily described as an unreasonable way to promote competitive investment in facilities."[512]

While UNE-P is helpful for competitive LECs to transition to competitive switch deployment, WorldCom's and AT&T's experiences also demonstrate that it is not sufficient. The BOCs ignore this critical point when they argue that UNE-P is not a migratory route to competitive switch deployment because WorldCom and AT&T have built substantial residential customers base in New York using UNE-P, without converting customers to their own facilities. While economies of scale and scope in switch deployment are somewhat of a barrier to facilities-based entry, they are not the primary barrier. There are also the substantial problems associated with incumbent LECs' conduct. Problems associated with manual hot cuts, collocation, and transport make it economically unfeasible for competitive LECs to provide switch-based service to residential and small business POTS users. That other factors currently make it impossible for competitive carriers to transition to mass market facilities-based service does not change the fact that UNE-P is necessary for that transition to take place.

Finally, the BOCs' suggestion that UNE-P diminishes *their* incentives to invest in facilities is both unfounded and largely irrelevant, and the Supreme Court has flatly

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[511] *See* AT&T Comments at 17; WorldCom Comments at 88-90.

[512] *Verizon v. FCC*, 122 S.Ct. at 1651.

rejected it. Incumbent LECs have continued to invest substantially in facilities: since the passage of the Telecommunications Act, they have invested more than $100 billion in facilities. As the Supreme Court noted, that is entirely to be expected: as long as there is some competition in the local telephone services business, "the incumbents will continue to have incentives to invest and to improve their services to hold on to their existing customer base."[513] Nor is there any evidence that incumbents would have invested more in their networks if UNE-P were not available. To the contrary, the evidence shows that BOCs have *increased* investment in their networks since passage of the Telecommunications Act of 1996 and the beginning of UNE-based competition.[514]

Moreover, from the standpoint of overall economic efficiency, it makes no sense at present to encourage competitive LECs to deploy their own switches. It is clear that the future of telecommunications lies in packet switching, but it is too soon for competitive LECs effectively to deploy packet switches for IP voice service. But competitive LEC deployment of additional circuit switches would only increase the overall investment that will be stranded with subsequent deployment of packet switching. Rather, it is more efficient at present for competitors to rely on incumbent LEC circuit switches, which have excess capacity. If it were not for the incumbent LECs' incentive to harm competitors, this would make economic sense for the incumbents as well.

In any event, as the California Public Utilities Commission notes in its comments, nothing in the Act indicates that Congress intended to limit the incumbent LECs' duty to unbundle bottleneck facilities in order to encourage the incumbents to invest in new

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[513] *Id.* at 1676, n.33.

[514] WorldCom Comments at 98.

bottleneck facilities.[515] Although the Court of Appeals has now indicated that the impairment analysis mandated by the Act must include an evaluation of the overall effect on competition, as well as the effect of unbundling on investment, the Act's primary focus remains whether competitive carriers would be impaired without access to unbundled elements. Even if investment were marginally diminished as a result of the availability of UNE-P – and there is no evidence that it would be – the Act would require the availability of UNE-P because competitive LECs would be impaired without it.

b) The FCC Should Expand the Reach of UNE-P Based Competition by Lifting Restrictions on Unbundled Switching.

Given the centrality of UNE-P to any mass market competition, the Commission should expand the reach of UNE-P, not narrow it, as it would by enlarging the current 3-line "carve-out" to unbundled switching requirements. Enlarging the exception would stifle competition, and leave a considerable segment of mass market customers without a choice in their local telephone service. Instead, the Commission should reduce the scope of the switching exception by making it applicable only to customers with DS-1 service or above, and then only in the 50 largest MSAs ands only if EELs are available.

(1) Switching Exception Should Only Apply in 50 Largest MSAs

The switching exception should continue to be limited to those areas in which competitive LECs can profitably deploy their own switches – that is, areas with a sufficiently dense population to permit the competitive LECs to build a substantial consumer base close enough to their switch that the cost of transport does not become prohibitive, and areas where EELs are available. As WorldCom noted in its initial

[515] California Public Utility Commission Comments at 7.

comments, these areas are likely limited to the 50 largest MSAs, which serve as an effective surrogate for areas in which competitive LECs have been able to deploy their own switches.[516] With the exception of making general arguments against all unbundled switching,[517] no BOC argues for a different break point or demonstrates that competitive carriers have been able effectively to compete with switch-based service outside of the top 50 MSAs.

If the Commission wishes to adopt a more granular definition of the geographical scope of the switching exception, however, it should conclude that any limit on competitors' access to unbundled switching should be applied only in MSAs in which four or more competitive LECs have deployed their own voice-capable switches. Those are areas where competition has developed to the point that large business customers would have a real choice even in the absence of UNE-P. The Commission could implement such an exception by permitting the BOCs to present evidence to the relevant state commissions that four or more competitive LECs have deployed voice-capable switches in a particular MSA. Of course, if one of the four competitive LECs left the market, there would have to be an avenue to restore unbundled switching.

(2) Switching Exception Should Only Apply to Customers with DS-1 Service or Greater

Even within the most densely populated MSAs, any switching exception should be limited to customers with DS-1 service or greater. As the comments of competitive LECs and the GSA make clear, the Commission's current 3-line exception to the

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[516] WorldCom Comments at 85.

[517] By arguing against customer-specific rules altogether, Qwest in effect seeks to eliminate the switching exception. *See* Qwest Comments at 17.

incumbent LECs' duty to provide unbundled switching poses an unnecessary obstacle to UNE-P based competition even in the top 50 MSAs. Given the limitations of the hot-cut process, it is simply not feasible for competitive LECs to provide switch-based service for customers with 3 access lines or more.

As Z-Tel notes, the 3-line rule does not account for the practical realities of cost, lack of reliability, and delay, or the fact that aggregation typically is not economically viable unless the customer has DS-1 or greater service.[518] AT&T confirms that aggregation typically becomes economically viable at about 16 to 20 lines.[519] The most fundamental barrier to use of unbundled switching is the cost and difficulty of the manual hot cut process, and this difficulty exists even for customers with 5 or 10 DS-0s. While a competitive LEC needs only a single not-cut to serve a customer with DS-1 service (*i.e.*, with the equivalent of 24 DS-0s), thus reducing the cost and coordination difficulties, 5 or 10 hot cuts are needed to serve a customer with 5 or 10 DS-0s. The fact that a customer has 5 or 10 DS-0s therefore does not make provision of service any more economical than service for a customer with a single DS-0. It simply creates more hot cuts that need to be paid for and coordinated. Thus, the current 3-line exception does not promote transition to self-provisioning; rather, it makes it impossible for competitive LECs to provide competitive service to mass market customers with more than 3 access lines, but fewer than 16 to 20 lines.

Small business customers, whose demand characteristics for voice service are largely the same as residential customers, fall into this gap between 3 and 16 access

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[518] Z-Tel Comments at 51-52.

[519] *Id.* at 53.

lines.[520] The telecommunications needs of most small businesses are similar to those of consumers – they need local and long distance service with similar calling features. Basing a "carve-out" on a simple residential/business split would therefore not take account of small business customers and their telecommunications needs. Indeed, in part because of the existing switching exception, 80% of small business customers at present remain with the incumbent LECs. Competitive carriers are better able to compete for small business customers in the four states that have reduced the scope of the switching exception or eliminated it altogether.[521]

Moreover, the greater the scope of any switching exception, the less potential there is to serve *other* customers via UNE-P. A successful mass market strategy depends on creation of uniform procedures to serve mass market customers across a wide area, including automated, end-to-end ordering and provisioning systems and standardized offerings that require a substantial customer base. The mass marketing necessary to support such offerings also makes far less sense if many of the potential customers for such an offering are excluded by regulation.

Finally, as WorldCom explained in its initial comments, any switching exception should not aggregate the service of multi-location customers, since many of these customers have locations without DS-1 or higher service. Nor should any exception apply in any area where competitive carriers have not yet built a sufficient customer base

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[520] The General Services Administration notes that federal agencies are among the customers who fall into this gap, since federal agencies require at least four access lines in high-density areas of major metropolitan centers. For that reason, the GSA's comments join the many others urging the Commission to discard the 3-line exception.
[521] Huyard Declaration ¶ 12.

to justify deploying their own switches. Competitors continue to require UNE-P if they are to serve these locations effectively.

In short, replacing the 3-line exception with an exception for DS-1 service – or 18 lines, the number of lines at which a customer typically crosses over to DS-1 service[522] – would allow all customers to benefit from competition in the local service sector. The Commission should widen the reach of UNE-P based competition by narrowing this exception.

c) The FCC Should Adopt Regulations that Encourage Competitive LECs to Build Their Own Facilities, Rather than Regulations that Discourage Competition by Denying Access to UNEs.

Encouraging facilities investment, as the state public utility commissions have noted, must not come at the expense of reduced competition.[523] Rather than limit the availability of UNE-P, which is necessary to foster mass market competition, the Commission should consider alternatives that encourage competitive LECs to invest in their own facilities while continuing to preserving the clear benefits of UNE-P based competition. The Commission's efforts should be aimed at eliminating still-existing barriers to facilities-based entry, rather than rebuilding those barriers that UNE-P has begun to erode.

First, the Commission should turn its attention to eliminating the cost and difficulty of the manual hot cut process, a key barrier to competitive LEC entry via unbundled loops, particularly for serving significant volumes of customers. An essential

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[522] WorldCom Comments at 90.

[523] California Public Utility Commission Comments at 8, 10.

prerequisite of any move towards mass market competition via unbundled loops is the creation of an electronic hot cut process by which customers could be seamlessly cross-connected from incumbent LEC loops to competitive LEC facilities. Such a process would reduce the cost of hot cuts as well as making the process compatible with a mass market product.

Second, the Commission should also promote deployment of EELs, which would reduce the need for competitive LECs to pay expensive collocation costs. Existence of EELs would eliminate the need for competitors to collocate at every end office in which they wished to serve customers.

Third, the Commission should reduce the substantial advantage that incumbents have with respect to transport by ensuring deployment of concentration equipment in conjunction with EELs. At present, because of their vastly smaller market share, competitive LECs can capture the substantial economies of scale of switching only by placing their switches much farther from customers on average than incumbent LECs place their switches. This requires competitive LECs to pay substantial transport costs that the incumbents can avoid. This problem can be alleviated, however, through the use of EELs. EELs would reduce the competitors' transport costs. Moreover, competitors' costs also could be further reduced significantly if the incumbent LECs concentrated competitive traffic at each central office using IDLC technology such as GR-303. That would allow several competitive LEC lines to be carried to their switch over a single circuit, thereby reducing the overall costs.

It is entirely realistic to expect incumbent LECs to provide competitive LECs with access to concentrated EELs. In New York, Verizon agreed to provide competitive LECs

with access to EELs with concentration and multiplexing and to allow commingling of local and access traffic.[524] The New York Commission then directed Verizon to provide concentrated EELs unless Verizon showed it was technically infeasible to do so.[525] The NYPSC later concluded that concentration of traffic through deployment of GR-303 and electronic cross connections was technically feasible.[526] Verizon does not yet provide electronic hot cuts from the main distribution frames in its central offices to competitive LEC facilities, however.

If, in addition to concentrated EELs, incumbent LECs also provided a frictionless provisioning process so that the cost of hot cuts was eliminated, the incumbents' cost advantage potentially could be reduced to the point that competitors could compete using a UNE-loop strategy. In his declaration, Mark Bryant provides a cost model which shows just that – at least once a competitive LEC achieves a 15 percent share.[527]

Encouraging facilities investment need not, and should not, mean discouraging nascent competition in the residential and small-business sectors. It should mean taking the steps that could open the possibility that competitive LECs could use their own switches to serve residential and small business customers.

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[524] *Petition of New York Telephone Co. for Approval of its Statement of Generally Applicable Terms*, Case 97-C-0271 at 10-11 (NYPSC April 6, 1996).

[525] *Order Directing Tariff Revisions*, Case 98-6-0096 at 10 (NYPSC March 24, 1999).

[526] *Order Directing Rate Reductions*, Case 95-6-0657 at 11 (NYPSC Oct. 21, 1999); *See also Order Regarding Multiplexing*, Case 98-C-0690 at 7 (NYPSC August 10, 1999) (concluding that loop/mux configurations are EELs and directing Verizon to continue to commingle access and UNE loops).

[527] Bryant Declaration ¶ 53.

D. Signaling Networks and Call-Related Databases

There is little disagreement among commenters that incumbent LECs must continue to provide access to their signaling networks and call-related databases.

As WorldCom explained in its initial comments, unbundled incumbent LEC switching is inoperable without access to the incumbents' corresponding signaling network; thus, competitive LECs must have access to unbundled signaling when using unbundled switching.[528] For the same reason, WorldCom explained, competitors must have access to the incumbent LECs' call-related databases when using unbundled switching.[529] No commenter disagrees with this conclusion.

Nor does anything in the recent Court of Appeals' decision call this conclustion into question. The importance of unbundled signaling and call-related databases to competitors that are reliant on unbundled switching has no relationship to geography. And it is not based on economies of scale or other factors that raise competitors' costs. There simply is no alternative to unbundled signaling and call-related databases for competitive LECs using unbundled switching. There can be no doubt, therefore, that incumbent LECs must continue to unbundle signaling and call-related databases for competitive LECs that rely on unbundled switching.

WorldCom further explained why access to incumbent LEC signaling networks and call-related databases is important even when a competitor is using its own switches.[530] Despite the substantial advantages of incumbent LEC signaling networks

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[528] WorldCom Comments at 121.
[529] *Id.* at 123.
[530] *Id.* at 121-24.

and call-related databases, however, WorldCom has managed to construct its own databases for many functions and to access those databases using its own signaling network. But WorldCom cannot duplicate the line information database (LIDB); thus, access to this database remains absolutely critical. And while WorldCom has constructed its own calling name (CNAM) and directory assistance databases, those databases will be far inferior to the incumbent LECs' databases unless competitors are ensured access to data in these databases via batch downloads.

BellSouth and Verizon advocate elimination of the unbundling requirement for signaling when competitive LECs are using their own switching. They do not show, however, that third-party signaling networks have increased in quality or ubiquity since the Commission concluded that such networks were an inadequate substitute for unbundled signaling or that such networks now have the redundancy needed to avoid outages. Instead, BellSouth contends that signaling should no longer be unbundled for switch-based competitive LECs because BellSouth has eliminated some signal transfer points (STPs) in its signaling network.[531] BellSouth fails to introduce any evidence into the record, however, to indicate that third-party signaling networks are now comparable to those of the incumbent LECs. As for Verizon, it merely quotes promotional materials from third-party vendors without providing any independent evidence on the quality of their signaling networks.[532] Moreover, neither Verizon nor BellSouth disputes that

[531] BellSouth Comments at 103.

[532] Verizon Comments at 130-32.

competitive LECs need access to the incumbents' signaling networks even when they are using their own signaling networks or those of third parties.[533]

While BellSouth argues that unbundling of signaling should no longer be required for switch-based competitors, even BellSouth does not argue against unbundling of call-related databases. Verizon is the only BOC to do so. Verizon again cites promotional material from third-party vendors indicating that they provide some call-related databases.[534] Verizon fails to show, however, that these databases are remotely comparable in quality to those of the BOCs, or even that competitive LECs are using these databases in significant numbers. WorldCom has explained that for databases such as LIDB and CNAM, neither a competitive LEC nor a third-party provider can readily duplicate the information in the incumbent LEC's databases.[535] As declarant Dr. Bernard Ku noted:

> LIDB contains line and billing information for all lines of ILEC customers, for example, as well as information on all CLEC UNE-P or resale customers. This information is updated constantly. Thus, when CLEC customers attempt to call ILEC customers, who still constitute the vast majority of customers, a CLEC has no way of determining whether the ILEC customer will accept collect calls, for example, without access to the ILEC's LIDB information. A CLEC or third-party vendor cannot develop its own LIDB without access to the ILEC's LIDB – and even then

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[533] Declaration of Bernard Ku ¶ 6, attached to WorldCom Comments as Attachment E. BellSouth further argues that unbundling of signaling for switch-based competitive LECs diminishes investment in signaling networks specifically and facilities-based deployment generally. BellSouth Comments at 109-10. Even setting aside the fact that BellSouth's advocacy is inconsistent with its simultaneous position that competitive LECs have been investing in signaling networks, forcing competitive LECs to deploy their own signaling networks in order to use their own switches potentially could diminish competitive LEC investment in switches.

[534] Verizon Comments at 133-34.

[535] WorldCom Comments at 123, 125..

> would need information from the ILEC to be updated many times each day.[536]

Verizon does not argue to the contrary. And there is no evidence in the record of a quality alternative to LIDB or to CNAM databases. WorldCom has not developed an alternative to LIDB even though it has its own signaling network for its switch-based customers and would like to reduce its dependence on the incumbent LECs. Even if WorldCom could develop such a database (which it cannot), immediate elimination of access to the incumbent LECs' databases would cause substantial disruption, as it would take significant time and capital to attempt to develop an alternative.[537]

In contrast to LIDB, WorldCom has developed an alternative to the incumbent LECs' CNAM databases, but because of limitations in the information available to WorldCom, WorldCom's caller ID service cannot provide the name of most callers.[538] WorldCom has thus explained that at least for the CNAM database, the Commission should require incumbent LECs to provide bulk downloads, as this would enable at least some competitive LECs to create their own databases which are equal in quality to those of the incumbent LECs.[539] The Commission has already determined that CNAM is a UNE to which competitive LECs must have nondiscriminatory access. This in turn requires access via batch downloads. Only with such downloads will competitive LECs

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[536] Ku Declaration ¶ 8.

[537] In addition, the incumbent LECs have substantial economies of scale in developing call-related databases, economies of scale that competitors generally do not have at present. WorldCom Comments at 123.

[538] Gallant/Lehmkuhl Declaration ¶ 14 (Attachment F to WorldCom Comments).

[539] WorldCom Comments at 124-27.

be able to control CNAM data to the same extent as the incumbent LECs, and create their own new and innovative services.[540] No commenter disputes this.

WorldCom also explained that the Commission should clarify that directory assistance databases must be unbundled under section 251(c)(3).[541] No commenter has responded to this claim. Incumbent LECs still control the vast majority of directory assistance data, and data from other sources is far inferior.[542]

Moreover, the Commission should clarify that incumbent LECs must provide access to customized routing over Feature Group D trunks so that competitors can minimize the cost of transport in accessing their own OS/DA services. Customized routing is part of the unbundled switching network element.[543] The Act therefore requires the incumbent LECs to provide access to customized routing as part of its requirement of nondiscriminatory access to UNEs. Indeed, The Commission already has specified that requesting carriers are entitled to designate the trunks on which the incumbent LECs must route OS/DA traffic.[544] And the Commission specifically recognized the incumbents' obligations to provide customized routing over Feature Group D trunks where it is feasible to do so.[545] Such access is technically feasible,[546] as

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[540] *Id.*

[541] WorldCom Comments at 127-29.

[542] *Id.*; Lehmkuhl Declaration ¶ 4 (Attachment G to WorldCom Comments).

[543] 47 C.F.R. § 51.319 (c)(1)(iii)(B) ("all features, functions and capabilities of the switch, which include but are not limited to: . . . (B) All other features that the switch is capable of providing, including but not limited to, customer calling, customer local area signaling service features, and Centrex, as well as any technically feasible customized routing functions provided by the switch.")

[544] *UNE Remand Order* ¶ 441 n.867.

[545] *Id.* ¶ 226.

several state commissions have already found.[547] Nonetheless, incumbent LECs are generally refusing to allow WorldCom to route OS/DA traffic over Feature Group D trunks. The Commission should clarify that the incumbent LECs must provide such routing.

Competitive carriers' need for access to call-related databases is not dependent on geography. Nor is it simply a matter of cost. Without access to the incumbent LECs' LIDB, CNAM and directory assistance databases, competitive LECs cannot provide products that are comparable to those of the incumbents. Signaling and call-related databases must continue to be unbundled even when competitive LECs are using their own switching.

E. OSS

There is apparently universal agreement that OSS must continue to be unbundled. It could hardly be otherwise, as competitive LECs could not order other UNEs without access to the incumbents' systems that process competitors' orders.

The need for OSS is ubiquitous. No matter where they are providing service, competitive LECs must be able to communicate with the incumbents to order unbundled

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[546] *See* Declaration of Edward Caputo Regarding Checklist Item Two – Non Discriminatory Access to Network Elements, attached as Exhibit 2 to WorldCom Comments regarding *Application by Qwest Communications International Inc. for Provision of In-Region, InterLATA Services in Colorado, Idaho, Iowa, Nebraska and North Dakota*, CC Docket No. 02-148.

[547] For example, an Administrative Law Judge in Minnesota concluded that WorldCom and others demonstrated that Qwest improperly did not accommodate technologies used for customized routing as required by the FCC, and therefore required Qwest to offer OS/DA as a UNE. *See Commission Investigation into Qwest's Compliance with Section 271(C)(2)(B) of the Telecommunications Act of 1996; Checklist Items 3, 7, 8, 9, 10, and 12;* OAH Docket No. 12-2500-14485-2, PUC Docket No. P-421/C1-01-1370, State of Minnesota Office of Administrative Hearings for the Minnesota Public Utilities Commission (May 8, 2002).

network elements, interconnection, and resold services, to receive bills, and to place maintenance requests.

F. NID and Inside Wire

As WorldCom explained in its initial comments, incumbent LECs must continue to provide access to the NID and inside wire, either individually or in combination (depending on the configuration of these UNEs in a particular building), on an unbundled basis nationwide, when competitive LECs take unbundled loops.[548] Competitors' access to the incumbent LEC's NID and inside wire is often the only means by which a competitive LEC can quickly and efficiently offer service to customers located in multiple tenant environments.

At a single premise unit, or at an MTE where the owner has established a single minimum point of entry (MPOE), competitive LECs need access to the NID – either as a separate stand-alone element or as part of the loop element, as suggested by AT&T and Verizon[549] – when using an incumbent LEC unbundled loop to reach a single demarcation point. Even when competitive LECs bring their own loops to the MTE and intend to utilize inside wire owned by the building owner, competitors must access the NID in order to utilize the inside wire[550] owned by the MTE owner.

Where a building owner has not established a single MPOE from which to access each customer in the MTE, competitive LECs that deploy their own loops to an MTE

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[548] Comments of WorldCom at 119-20.

[549] Comments of Verizon at n.433; Comments of AT&T at 161-62.

[550] Including house and riser and interbuilding campus wire.

may need to utilize the incumbent's inside wire to reach customers or to provide redundant service capability.

Where a building owner has not established a single MPOE from which to access each customer in the MTE, and the competitive carrier does not find it economically or technically feasible to establish its own NID and run its own wire directly to its customers,[551] it will need access to both the NID and incumbent LEC inside wire. This would be the case if the competitor did not bring its own loop to the MTE, but also would be the case when competitive LECs plan on serving multiple customers in an MTE by terminating their loops at the NID and utilizing the incumbent's inside wire in order to avoid rewiring much of a building.

[551] Contrary to Verizon's statements in its initial comments, the cost of installing a new NID at each and every customer location would prevent competitive LECs from offering a viable competitive service. *See* Comments of Verizon at n.433.

V. CONCLUSION

For the foregoing reasons, the Commission should require the incumbent LECs to provide requesting carriers with nondiscriminatory access to the UNEs and UNE combinations discussed above, at TELRIC-based rates.

Lisa B. Smith
Richard S. Whitt
Henry G. Hultquist
Kimberly A. Scardino
WorldCom, Inc.
1133 19th Street, NW
Washington, DC 20036
(202) 736-6478
Kimberly.Scardino@wcom.com

Ruth Milkman
Gil M. Strobel
Richard D. Mallen
Lawler, Metzger & Milkman
2001 K Street, NW
Suite 802
Washington, DC 20006
(202) 777-7700
gstrobel@lmm-law.com

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