Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Deployment of Wireline Services Offering Advanced Telecommunications Capability	)	CC Docket No. 98-147
	)	
and	)	
	)	
Implementation of the Local Competition Provisions of the Telecommunications Act of 1996	)	CC Docket No. 96-98

DECLARATION OF CHARLES KIEDERER

1. My name is Charles Kiederer. I am Director, Wholesale Services Technology in the Technology organization for Verizon. In this position, I am responsible for providing support to the Wholesale Services Marketing organization on technical issues associated with the development of wholesale products and services. I earned my Bachelor of Science degree in Electrical Engineering from the Rochester Institute of Technology in 1972 and a Masters of Business Administration degree from Pace University in 1986. I have 29 years of experience in New York Telephone, NYNEX, Bell Atlantic and Verizon. During that time, I have held a variety of positions of increasing responsibility in Technical Services, Engineering and Planning. Prior to my present assignment, I was Director – Network Interoperability. In that position, I was responsible for analyzing and resolving technical issues associated with Interexchange Carriers and Competitive Local Exchange carriers ("CLECs") and the development of overall network architecture recommendations.

2. I present this declaration for the purposes of describing the space limitations within remote terminals that Verizon has installed within the loop environment and the architecture of such remote terminals as they are delivered from the manufacturer and/or assembling organization. I will also describe the manner in which transmissions from a Verizon central office flow through a remote terminal and the technically feasible manner in which a competing carrier may obtain subloops from Verizon in order to offer digital subscriber line ("DSL") services.

3. Verizon uses three basic forms of terminal enclosures to house circuits and equipment remotely located from the central office. These are controlled environmental vaults ("CEVs"), which are below-ground structures that are kept at controlled temperature and humidity conditions; controlled environmental huts, which are similar above-ground enclosures; and cabinets, which are small, above-ground, pad, wall or pole-mounted structures with no environmental controls. In addition to these three types of remote enclosures, loop equipment can also be located in equipment rooms in the basements or other areas of buildings. CEVs and huts are sized so that a technician can enter the enclosure and gain access to the equipment and wiring in the limited space available. However, there is no space for multiple technicians to access and perform activities at the same location. In cabinets a technician gains access to wiring from outside the structure by opening a hinged door.

4. Verizon orders remote terminals that are pre-equipped, generally for a three-year planning period, and they are completely pre-wired for the maximum services and capabilities that can be provided from that terminal. For example, a cabinet could be shipped, assembled and equipped with three channel bank shelves to meet the initial planning design, but it will be totally pre-cabled for the maximum number of channel banks that can be accommodated by the cabinet.

Ordering pre-wired remote terminals is the norm in the industry and is far more cost-effective and efficient than simply ordering enclosures and undertaking to wire them on-site. In the case of cabinets, equipment may be mounted back-to-back in the cabinet, making it difficult to gain access to install cabling to new equipment positions. Once the cabinet is deployed in the field, equipment is physically installed in the cabinet, and the structure is exposed to the environment, there is significant cost, complexity and service disruption potential involved with attempting to route new wiring and cabling through non-accessible wiring ducts within the cabinet. Similarly, in the case of CEVs and huts, equipment is mounted against the wall of the structure, making it extremely difficult to install additional cabling between new and existing equipment. All three types of remote terminals were designed and ordered to meet Verizon's existing and planned needs to provide dialtone telephone service, not to accommodate collocation. As a result, it would be difficult and disruptive to attempt to install and interconnect equipment from other carriers in existing remote terminals. Verizon currently has about 38,000 remote terminals in operations in its service territory. Moreover, in the vast majority of remote terminals, there is little or no vacant space that could accommodate other carriers' equipment.

5. In addition, unlike a central office, it would be physically impossible to segregate Verizon's equipment into separate space in a remote terminal. Securing equipment inside a locked enclosure inside the remote terminal is not a practical solution, because of the additional space such an enclosure would occupy within the structure, in which excess space does not exist. Providing secure access to remote terminal locations would likewise become an increasingly difficult problem to administer and control. Access to the various types of remote terminals range from padlocks, to keys, to special tools. Retrofitting tens of thousands of remote terminals

for new security mechanisms to give other carriers access would be a monumental and costly undertaking.

6. For these reasons, any collocation that is required within remote terminals (in those few instances where any collocation space is available) should be limited to virtual collocation, in which Verizon's own technicians install and maintain equipment that the collocators supply. Virtual collocation will enable Verizon to both protect its equipment, because only its technicians will gain access, and make more efficient use of the limited available space, because it eliminates the need to segregate equipment within the remote terminal. It would also prevent one carrier's collocated equipment from being inadvertently affected by another competitor's technician working in the limited space. If, however, the Commission does require physical collocation, which it should not, the only practical means of protecting telephone company equipment is to allow use of escorts.

7. Collocation in remote terminals is not the most efficient way for a data carrier to connect to the Verizon's network to provide DSL service. This is because the accessible terminal, which is the point of interconnection, is often not in the remote terminal itself. Instead, it is at a feeder distribution interface ("FDI," also called the serving area interface), which is often located near, but not in, the remote terminal. A data carrier that wishes to interconnect could in many cases erect a small cabinet close to the FDI or lease a small amount of space in, or on the outside wall of, a nearby building to locate a cabinet for that purpose.[1]

[1] Several carriers could share such a structure to minimize cost and eliminate the need for multiple zoning or other municipal permits.

8. The reason that interconnection is feasible at the FDI rather than at the remote terminal is because the distribution pairs are terminated and accessible only at the FDI. A remote terminal enclosure does not typically contain an accessible interconnection point. This is due, in large part, to the architecture and engineering design of the Digital Loop Carrier ("DLC") system. The typical architecture of a fiber-fed DLC system is as follows (see Figure 1). The fiber cable from the central office is terminated inside the remote terminal electronics cabinet and is cross-connected, through the use of a mini fiber distribution frame, to the high speed side of the DLC electronics. Copper feeder cable, known as derived feeder pairs, is extended from the DLC electronics and hard-wire connected through electrical protectors units, which protect the DLC equipment from outside power surges. The protector blocks, mounted in the remote terminal enclosure, are subsequently hard-spliced to copper cables leaving the remote terminal and terminating at one or more FDIs. These FDIs may be located adjacent to the remote terminal electronics cabinet, or may be located as much as several thousand feet from the serving remote terminal cabinet, close to the customer location. All splicing is completed in a splice chamber that is part of the cabinet or in splice enclosures at the CEV or hut. In some cases, a splicing manhole may exist near the remote terminal. In order to gain access to the distribution pairs at any point other than the FDI, splices would need to be physically accessed and opened between the remote terminal and the FDI. This becomes a customer service issue, because customers may need to be taken out of service when splices are opened, as well as a very labor-intensive work operation. It is for this reason that federal regulations consider opening splices not to be a technically feasible method of interconnection. Therefore, the FDI is the most logical, cost-efficient and technically, as well as operationally, feasible point in the network to access the distribution sub-loops for interconnection.

9. As a result, there is no need for a competitor to locate equipment in the remote terminal in order to connect to Verizon's distribution network. Even if there were room available in remote terminals for that purpose, which there usually is not, other alternatives for sub-loop interconnection at the FDI are available to competitors.

10. In addition, it would be both inefficient and operationally chaotic to allow competitors to supply their own line cards for insertion into Verizon's network equipment located in remote terminals. Each line card or cards would need to be dedicated to an individual carrier, but it is unlikely that carriers will use all of the circuits available on the line card. This results in an inefficient use of resources in potentially tens of thousands of Verizon's remote terminals. Furthermore, Verizon does not have systems today that can inventory which line cards are assigned to which carrier in which remote terminals. Existing systems were designed to operate under the assumption that all equipment located at a remote terminal is owned and administered by Verizon. The massive changes to these systems needed to accommodate competitors' line cards would be very expensive and time-consuming, assuming they could be made at all.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on October __, 2000

Charles Kiederer

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

In the Matter of	)	
	)	
Deployment of Wireline Services Offering Advanced Telecommunications Capability	)	CC Docket No. 98-147
	)	
And	)	
	)	
Implementation of the Local Competition Provisions of the	)	CC Docket No. 96-98
	)	
Telecommunications Act of 1996	)	

COMMENTS OF THE VERIZON TELEPHONE COMPANIES

Michael E. Glover
Edward Shakin
Of Counsel

Lawrence W. Katz
1320 North Courthouse Road
Eighth Floor
Arlington, Virginia 22201
(703) 974-4862

October 12, 2000

TABLE OF CONTENTS

A. List of the Verizon Telephone Companies

B. Declaration of Michael D. Poling

C. Declaration of David G. Maples, III

D. Declaration of Charles Kiederer

E. Verizon Petition for Reconsderation

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Deployment of Wireline Services Offering Advanced Telecommunications Capability	)	CC Docket No. 98-147
	)	
and	)	
	)	
Implementation of the Local Competition Provisions of the Telecommunications Act of 1996	)	CC Docket No. 96-98

COMMENTS OF THE VERIZON TELEPHONE COMPANIES[1]

I. Introduction and Summary.

In enacting section 251(c)(6) of the 1996 Act, Congress gave the Commission limited authority to take the property of incumbent local exchange carriers by requiring them to permit physical collocation of "equipment necessary for interconnection or access to unbundled network elements." This means that the Commission is limited to requiring collocation only where a competitor has no reasonable alternative to enable it obtain interconnection or access to unbundled network elements. It also means that the Commission can order collocation of equipment whose sole functions are to provide interconnection or access to unbundled network elements.[2] These limits make good policy sense, because they facilitate competition while properly retaining the incumbent local carriers' control over their own offices to enable them to

---

[1] The Verizon telephone companies ("Verizon") are the local exchange carriers affiliated with Verizon Communications Inc. listed in Attachment A.

[2] *See Order on Reconsideration and Second Further Notice of Proposed Rulemaking in CC Docket No. 98-147 and Fifth Further Notice of Proposed Rulemaking in CC Docket No. 96-98*, FCC 00-297 (rel. Aug. 10, 2000). Even though this order was released as a single document, for convenience Verizon will refer to paragraphs 14-69 as the "Reconsideration Order," paragraphs 70-117 as the "2nd Notice," and paragraphs 118-133 as the "5th Notice."

provide telecommunications services to the public. Just like any other company, telecommunications carriers should obtain their own space to operate their business and should be allowed to set up shop on the incumbent's premises only where that is the only way to interconnect with or obtain access to the incumbent's network elements.

II. Physical Collocation May Be Required Only Under Very Limited Circumstances.

A. *Collocation May Be Required Only Where There Is No Other Practical Alternative.*

At the outset, the Commission requests comment on how it should define certain statutory terms, particularly the word "necessary," and how those definitions should be reflected in the rules and policies it adopts in this proceeding. 2nd Notice at && 74-84. It should find that the term "necessary" modifies the phrase "physical collocation of equipment," so that any physical collocation can be ordered only where that collocation is "necessary for interconnection or access to unbundled network elements." As a corollary, where physical collocation is necessary, the collocated equipment may contain only those features and functions that meet the "necessary" test, and not features and functions that are unnecessary for that narrow purpose. Requiring collocation that exceeds this narrow scope would exceed the Commission's authority.

This result flows from the judicial and regulatory history surrounding the requirement to provide collocation. In 1994, the D.C. Circuit held that the Commission lacked the authority to order physical collocation. Physical collocation, the court found, constitutes a taking under the Constitution, and Congress had not given the Commission takings authority. *See Bell Atlantic Tel. Cos. v. F.C.C.*, 24 F.3d 1441 (D.C. Cir. 1994).

Two years later, Congress enacted section 251(c)(6) to give the Commission a *limited* exception to this general prohibition, *i.e.*, to provide for "physical collocation of equipment *necessary* for interconnection or access to unbundled network elements at the premises of the

local exchange carrier." 47 U.S.C. ∋ 251(c)(6) (emphasis added). This exception was designed to enable competing carriers to provide services which they would be unable to offer without the ability to locate certain equipment on the incumbent's premises. By using the term "necessary," Congress strictly circumscribed the Commission's authority so as not to interfere with the incumbent's right and obligation to use its own premises efficiently to provide telecommunications services to its own customers. Mandating collocation that transcends the narrow statutory exception remains an unlawful taking, beyond the Commission's authority.

The D.C. Circuit recently confirmed that the Commission's authority is tightly circumscribed by the language of section 251(c)(6) of the Act. *See GTE Service Corp. v. F.C.C.*, 205 F.3d 416, 422 (D.C. Cir. 2000) ("*GTE*"). The court defined "necessary" as synonymous with "required" or "indispensable," rejecting the argument that it means simply "used or useful." *Id.* It found that not only must the features and functions in the equipment be indispensable, but that the arrangements themselves must also be required for interconnection or access to unbundled network elements. For example, it found that the requirement to allow cross-connections between collocators "imposes an obligation on LECs that has no apparent basis in the statute," because such cross-connections were not necessary for interconnection with the incumbent's network. *Id.* at 423. Similarly, the court found inconsistent with the statute the Commission's requirement that the collocator, rather than the incumbent, may choose where to establish collocation and its prohibition on requiring collocators to use separate or isolated rooms or floors. This shows that the court read the term "necessary" to transcend just the functions in the equipment that may be collocated and to modify the entire requirement for physical collocation.

As a result, under present law, the only physical collocation the Commission may lawfully require is that which is ***indispensable*** for the requesting carrier to obtain interconnection or access to unbundled network elements that it uses to offer service to the public. Or, as the Commission found in a related context (*i.e.*, determining what unbundled network elements the incumbent must provide to its competitors), collocation is "necessary" only "if the competitor is unable to offer service, without access to [here, the collocation], because no practical, economic, and operational alternative is available, either by self-provisioning or from other sources." *See Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, 15 FCC Rcd 3696, & 44 (1999) ("UNE Remand Order").[3]

Naturally, if the competitor can show that the cost of alternative interconnection arrangements is so significant that the competitor would be unable to offer a commercially viable service, or if it can prove that the alternative is technologically inferior and makes its service non-competitive, then the alternative is effectively unavailable. In that event, that alternative can be disregarded in deciding whether a proposed physical collocation meets the "necessary" standard.

However, just because physical collocation is useful, or less expensive, or more convenient, than an alternative method of interconnection does not mean that it is "necessary," and the Commission may not lawfully require incumbents to provide it. The language Congress enacted establishes a very strict standard, and the Commission cannot expand its scope on the

[3] The Commission should find that other provisions of section 251(c)(6) have no effect on the definition of "necessary." *See* 2nd Notice at & 76. Those provisions specify *how* physical collocation must be provided (under rates, terms, and conditions that are just, reasonable, and nondiscriminatory) and what happens when physical collocation meets the necessary standard but where there is insufficient space or where physical collocation is technically infeasible (virtual collocation may be substituted).

theory that the statutory limitation may not be the most technically or economically efficient manner of obtaining interconnection or access to unbundled network elements, as it suggests. *See* 2nd Notice at && 77-78. As the D.C. Circuit pointed out, citing a recent Supreme Court decision that interpreted the word "necessary" in determining what unbundled network elements must be provided to competitors, presumed cost savings are not a sufficient basis to expand the definition of "necessary" to include additional functions or equipment that is not indispensable. *GTE*, 205 F.3d at 423, citing *AT&T Corp. v. Iowa Utils, Bd.*, 525 U.S. 366, 389-90 (1999) ("*AT&T*"). Accordingly, mere cost efficiency cannot be a factor in determining whether physical collocation is "necessary for interconnection or access to unbundled network elements." If there is any other practical economic, and operational alternative, then physical collocation of equipment is not "necessary" and cannot lawfully be mandated.

Not only is such a result mandated by law, it is also good public policy. By limiting the equipment that is collocated, the Commission will free up space in incumbent carriers' offices to accommodate the equipment of additional competitors when and where collocation is truly necessary.

Moreover, there is no public policy reason why competing local telecommunications providers, just like any other business, should not be required to obtain their own office space to accommodate their own operations. Congress recognized that incumbent local exchange carriers are in the telecommunications business, not the real estate business. When necessary for interconnection to promote competition, the incumbents are required to provide space on their premises for collocators to collocate their equipment, where technically feasible and where space allows. But Congress never intended that the competitors could simply set up shop in the incumbents' central offices.

B. *All Functions In Collocated Equipment Must Be Necessary For Interconnection Or Access to Unbundled Network Elements.*

The Commission asks whether incumbents can be required to allow collocation of equipment that contains both "necessary" functions and other functions that are not necessary for interconnection or access to unbundled network elements. 2nd Notice at & 79. Consistent with the Act and court and Commission precedents, the answer is no. The D.C. Circuit made clear that requiring collocation of "a competitor's equipment that included *unnecessary* multi-purpose features ...would not really square with the terms of ∋ 251(c)(6)." *GTE*, 205 F.3d at 424 (emphasis in the original). This result would not break new ground, because the Commission has previously restricted the functions that may be placed in network equipment that a telephone company may locate on another premises. *See Amendment to Section 64.702 of the Commission's Rules and Regulations (Third Computer Inquiry)*, 2 FCC Rcd 3072, & 232 (1987). There, the Commission permitted carriers to deploy a loop-back testing function at the demarcation point on customer premises in tariffed network equipment, but only if that equipment had no other functions which would normally be in customer premises equipment. In direct parallel to the statutory limitations here, it permitted collocation on customer premises only of network functions that are "necessary" for loop-back testing.

Just as some of the equipment that is now collocated may contain other functions, this was also the case with loop-back testing equipment. There, the carriers had to disable the additional functions if they wanted to deploy the permitted function as network equipment. Very quickly, however, manufacturers adjusted to the market demand and offered equipment without the extraneous functions.

The same thing will happen here. The features that manufacturers include are principally based upon market demand. If there is a demand for equipment containing only functions which

can lawfully be collocated, manufacturers will soon offer that equipment, and, because customers will require it, that equipment will be efficient and state-of-the-art, despite the Commission's unsupported assumption to the contrary. *See* 2nd Notice at & 80. And, in any event, equipment containing only "necessary" functions – such as multiplexers, concentration devices, and Digital Subscriber Line Access Multiplexers ("DSLAMs") that are used in connection with digital subscriber line services, is readily available on a stand-alone basis.

This is not to say that a carrier is precluded from using multi-functional equipment to offer its services. The carrier simply must place its equipment on its own premises (or on premises leased from third parties) and use telecommunications facilities – its own or leased from another carrier – to connect with the incumbent. Competitors have full flexibility to install on their own premises equipment and software with a variety of telecommunications and non-telecommunications functions, just as incumbents have that flexibility to deploy the most useful equipment on their own premises.[4]

Accordingly, Congress had no intention of making collocation a preferred option for competitors who simply choose not to lease their own space. Instead, it is an exceptional remedy, to be used only when it is necessary to interconnect with the incumbent.

Even if it were not required by statute, restricting the functions that may be included in collocated equipment also has a strong policy basis. Requiring incumbents to permit collocation of a broad range of multi-functional equipment is quickly exhausting central office space. As shown below and in Attachment B, collocators are reserving vast amounts of central office space

[4] For this reason, the Commission's question asking what equipment the incumbents deploy on their own premises for competing services is not germane here. *See* 2nd Notice at & 81. Section 251(c)(6) does not limit the functions in equipment that any carrier may deploy on its own premises.

and ordering extra power and environmental control, apparently with the intention of using their collocation space to house all manner of network equipment.[5] In a great many cases, that space stays empty for years. The result is that incumbents no longer have use of their own property to offer their own services or to meet requests from additional collocators, while long-reserved collocation space lies fallow. If collocators were strictly limited to reserving the space that will house only equipment that is necessary for interconnection or access to unbundled network elements, and not other functions, the available central office space would be far more efficiently utilized. And the Commission should make clear that incumbents are free, after providing reasonable notice, to reclaim and reuse space that a collocator has failed to occupy within a specified period of time. The result would be lower costs – incumbents would not need to rebuild or expand their offices to meet their own service needs – and increased competition – available space could accommodate more collocated carriers.

C. *Collocation Is Limited To the Collocators' Telecommunications Equipment, Not Line Cards Inserted Into Incumbents' Equipment.*

The Commission may not lawfully adopt its proposal to allow competitors to supply line cards for inclusion in incumbents' hardware. *See* 2nd Notice at && 82, 109. The Act gives the Commission authority to order collocation only of "equipment." But line cards have no stand-alone function – they are useless without the associated hardware and software into which they are integrated. Therefore, line cards cannot be considered "equipment."[6] In addition, line cards inserted into equipment at the remote terminal would not be used to access the subloop

[5] One company, for example, routinely orders 400 square feet of space in every central office, as well as extra power.

[6] A line card associated with a collocator's equipment may be considered integral to its own equipment, but there is no statutory authority allowing a collocator to integrate a line card into an incumbent's equipment.

unbundled network element, because the accessible terminal for obtaining access to the subloop is at the FDI, which is generally not in the remote terminal.

Even if the Commission could require an incumbent to allow competitors to install or provide line cards for installation into the incumbent's equipment, which it cannot, the manufacturers made very clear in the Commission's forum on remote terminal collocation that they have no intention of producing line cards meeting various carriers' requirements for insertion into equipment at incumbents' remote terminals. Alcatel referred to the concept of a "universal back plane" which would accommodate multiple types of line cards as "laughable." Public Forum: Competitive Access to Next-Generation Remote Terminals, Transcript at 108 (May 10, 2000) ("May 10 Forum"). Likewise, Lucent commented that development of a universal back plane would not only be extremely time-consuming, it would also require a redesign of "the whole system management and integration." *Id.* at 110. Copper Mountain concurred, calling the required modifications "ludicrous." *Id.* at 111. In short, all of the manufacturers who appeared before the Commission testified that the concept of attaching disparate line cards to incumbents' equipment is not a viable concept.

This is not surprising, because each vendor needs to be able to differentiate its equipment from that of its competitors by offering unique features and functions, rather than allowing one size to fit all. And, as the manufacturers pointed out, each plug-in line card must be compatible with the overall design of the system with which it is to be used, including the software.

In addition, from a policy perspective, allowing each carrier to provide line cards would make highly inefficient use of the incumbent's equipment and increase costs for both the competitors and the incumbent's own customers. This is because each individual line card in a remote terminal gives access to multiple circuits. If each carrier supplied its own cards,

dedicated to its use, multiple circuits in each remote terminal would need to be dedicated to that carrier and would be unavailable for any other customer. It can be expected that many, if not most, carriers would not have use for all of those circuits in every remote terminal to which it connects. *See* Kiederer Declaration at & 10. The resulting unused capacity would at best significantly reduce efficient use of the network, thereby increasing costs, and at worst strain the available network capacity. By making inefficient use of the equipment that the incumbent has installed in the remote terminal, such an arrangement would allow fewer customers to be served, because there will simply be no room in the remote terminal to install additional equipment to serve those customers.

Moreover, attempting to inventory and provision multiple line cards belonging to multiple carriers in each of tens of thousands of remote terminals will create an Operation Support System nightmare. This is because the incumbent would need to find a way to continuously determine which competitor's line cards are in use in each item of equipment in each remote terminal. But Verizon's existing Operational Support Systems for inventory and assignment are predicated on Verizon owning all of the equipment. These systems merely assign the next piece of spare equipment that meets the service needs being provided. This arrangement will not work if the equipment is owned by more than one carrier and would require massive changes to existing inventory and provisioning systems to implement. *See id.* The Commission has never before required incumbents to retain an inventory of their competitors' equipment, but they would need to do so if the Commission were to require them to accept line cards for insertion into their equipment. Similarly, existing digital loop carrier systems cannot isolate the traffic from each line card and deliver it to the associated carrier's equipment in the central office. Without question, any costs involved in revising the operations support and provisioning

systems to include competitors' equipment should be borne by the cost causers – the competitors who supply the line cards.

Therefore, the Commission may not lawfully and should not as a policy matter require incumbents to allow competitors to supply line cards for insertion into the incumbents' equipment. If the Commission should nevertheless adopt such a requirement, it should limit such line cards to those manufactured by the same vendor as the equipment into which they are to be inserted or that are licensed by that vendor. Insertion of non-licensed cards could cause the equipment to malfunction and would void the manufacturer's warranty on the incumbent's equipment.

A far more efficient way of serving multiple carriers that does not involve the legal and policy considerations discussed above would be for the incumbents to offer a wholesale service, using their own DSLAMs and line cards. Competitors can use this wholesale offering to provide advanced services to the public. This was analogous to the approach that SBC proposed and which the Commission recently approved. *See Ameritech Corp. and SBC Communications, Second Memorandum Opinion and Order*, CC Docket No. 98-141, FCC 00-336 (rel. Sept. 8, 2000) ("SBC Order").

In seeking the waiver, SBC had proposed a particular form of network architecture. While SBC's "integrated" voice/data architecture may adequately address the issues related to *new* remote terminal deployments, an overlay or adjunct DSLAM architecture may be an efficient solution for advanced services providers at *existing* remote terminal locations.[7] For

[7] An overlay or adjunct architecture dedicates the incumbents' DSLAMs to a wholesale data service, allowing other carriers to provide advanced data services to their customers. SBC's approach provides both data and voice services and would generally require more space in the remote terminal.

example, an existing remote terminal may have sufficient space to add only one DSLAM shelf. If more than one advanced services provider requests space at this location, only the first carrier requesting space could be afforded access. If the incumbent were permitted, instead, to offer a wholesale service utilizing an overlay or adjunct DSLAM that it owns, multiple carriers could provide DSL service through that remote terminal. This would make the best and most efficient use of the limited available space at the existing terminal. However, because each remote terminal must be evaluated to determine the most efficient use of the existing space, the incumbent should be given the flexibility to determine the most efficient solution – integrated, overlay, or adjunct DSLAM – for any given remote terminal, given existing space constraints, expected growth requirements for dialtone voice service, and forecasted data service requests from advanced service providers. For these reasons, the Commission should not dictate a particular architecture for the incumbents' wholesale service.

III. The Commission Has No Authority Under The Act To Require Cross-Connections Between Collocation Arrangements.

The 2nd Notice asks whether the obligation of an incumbent to provide collocation for interconnection under section 251(c)(6) encompasses interconnection among non-incumbents who are collocated within the incumbent's office. *See* 2nd Notice at ¶¶ 88-89. It does not. The D.C. Circuit correctly rejected the Commission's rule requiring an incumbent local exchange carrier to permit collocators to interconnect to each other's equipment, finding that this "imposes an obligation on the LECs that has no apparent basis in the statute. Section 251(c)(6) is focused solely on connecting new competitors to LECs' networks." *GTE*, 205 F.3d at 423. The Commission cannot avoid the court's clear and straightforward reading of the statute by interpreting "interconnection" in section 251(c)(6) to encompass interconnection between the collocators' networks, rather than interconnection with the local exchange carrier. Moreover,

such interconnection is never "necessary" under section 251(c)(6), since there is nothing unique about the incumbent local exchange carrier's central office that prevents collocators from connecting to each other elsewhere.

Although section 251(a)(1) requires all telecommunications carriers to "interconnect" with each other, the only "interconnection" to which section 251(c)(6) refers is interconnection "at the premises of the local exchange carrier" which is "necessary for interconnection or access to unbundled network elements." As the D.C. Circuit explained, the focus of this section is "solely on connecting new competitors to LECs' networks." *Id.* Interconnection between collocators is not within this limited focus and cannot be required.

Moreover, read in the context of the comprehensive "Additional Obligations of Incumbent Local Exchange Carriers" in section 251(c), "interconnection" in section 251(c)(6) clearly refers to the incumbent's interconnection obligation in section 251(c)(2). Section 251(a)(1) cannot be imported into Section 251(c)(6) to require a incumbent local exchange carrier to provide collocation for purposes that are completely unrelated to interconnection with the incumbent local exchange carrier's network.

As explained above, Congress enacted section 251(c)(6) as a limited exception to the general prohibition against a "taking" of the incumbent local exchange carrier's property. Allowing collocators to use the incumbent local exchange carrier's premises as a hub to connect the collocators' networks would greatly expand that "taking" and result in potentially unlimited demands on scarce central office space.

In addition, requiring cross-connections between collocators within a central office cannot be justified on the grounds that they would be cheaper, more convenient, or of higher quality than cross-connections outside of the central office. As the D.C. Circuit pointed out, the

Supreme Court rejected the position that cost savings or higher quality can be relied on as a basis for meeting the statutory standard of "necessary." *See GTE,* 205 F.3d at 423, citing *AT&T*, 525 U.S. at 389-90. Moreover, given that the cost and quality of modern transmission facilities are distance-insensitive, especially over the short distances needed to reach local network hubs outside of the central office, there is no significant cost or quality advantage to connecting competitive local exchange carrier networks within the central office.

IV. It Is Contrary To The Act To Permit Collocators To Decide Where Equipment Should Be Placed In A Local Exchange Carrier's Central Office.

The Commission asks whether the incumbent local exchange carrier, rather than the collocator, should decide where in the central office the collocator's equipment should be placed. 2nd Notice at ¶ 96. Clearly, the answer is yes. The D.C. Circuit rejected the Commission's decision that the incumbent local exchange carriers must give competitive local exchange carriers the option of collocating their equipment in "any" unused space in the incumbent's premises, finding that there is nothing in the Act that allows "competitors, over the objection of LEC property owners, . . . to pick and choose preferred space on the LEC's premises." *GTE*, 205 F.3d at 426. Giving collocators control over the assignment of equipment locations within a central office would completely abrogate the incumbent local exchange carrier's property rights and go far beyond what is "necessary" for interconnection and access to unbundled network elements.

It also would be bad policy to allow collocators to place equipment anywhere they wish. As is explained in the attached declaration of Michael D. Poling, which appears in Attachment B, every central office is designed to make efficient use of space and to allow equipment to interconnect and function properly. Equipment with similar functions is grouped together; room for growth is planned for equipment, such as switches and frames, that must be contiguous;

equipment is segregated for safety and security purposes, and infrastructure (power, heating, ventilation, air conditioning, etc.) is designed to support each component. Efficient space planning would be impossible if collocated equipment were scattered haphazardly throughout the central office at the whim of each collocator.

Section 251(c)(6) places a duty on the incumbent local exchange carrier to provide physical collocation on rates, terms and conditions that are "just, reasonable and nondiscriminatory." This means that the incumbent remains the provider of collocation and may establish the terms and conditions under which competitors may be allowed on its premises, rather than being a passive owner that cedes control to others. This includes the ability to assign central office space to each collocation request, provided that the incumbent assigns space on "just, reasonable, and non-discriminatory terms."

The Commission asks whether this statutory standard is met if the incumbent assigns space to a collocator that costs more or takes longer to provision than space the incumbent assigns to itself or its affiliates. *See* 2nd Notice at ¶ 96. Such a comparison is meaningless. Each collocation request may involve more or less cost, and may take more or less time, than another collocation request, or than the costs of installing the incumbent local exchange carrier's own equipment. For instance, in a central office where space is exhausted and the incumbent local exchange carrier can accommodate additional requests only by converting administrative space to central office space, the costs and time involved in that conversion may be considerably greater than for installing additional equipment in space that the incumbent or existing collocators have reserved for their own use. The incumbent must perform a site survey to determine the best location for each collocation request, taking into account, among other things, such factors as the cost of construction, the time it will take to build, the availability of security

arrangements, and the collocator's need for space for future expansion. The incumbent has no reason to make its own job harder and risk exceeding the applicable collocation provisioning interval. Likewise, since the tariffed rate for collocation normally is the same regardless of whether additional construction is required, the incumbent local exchange carrier has no incentive to assign collocation to a more costly location.

The Commission should not adopt a rule precluding the incumbent from placing collocators in a room or isolated space separate from the incumbent's own equipment. *See id.* at ¶ 97. As the D.C. Circuit correctly observed, there is no justification for such a blanket prohibition. *See GTE*, 205 F.3d at 426. The Commission cannot presume that placing collocation in such locations detracts from the quality, cost, or availability of collocation.[8] In fact, separate space may be superior in many respects to collocation in the same area of the central office as the incumbent's equipment. A separate room or floor often provides better and less expensive security arrangements for both the incumbent and the collocator. It can allow easier access for the collocators' personnel and reduce the need for security cameras and other expensive security arrangements.[9] Separate space that is dedicated to collocation can be engineered to allow new collocation arrangements to be built more quickly, and to provide power and office connections likely to be requested by collocators. When incumbent local

[8] If a collocator believed that the requirement to be collocated in a separate room would reduce the amount of space available for collocation, it could raise this issue with the state commission when the incumbent conducts a tour after denial of a collocation request. However, if the incumbent does not deny the collocator's request, there is no basis for prohibiting the incumbent from placing the collocator's equipment in a separate room or floor.

[9] The Commission asks whether the incumbent local exchange carrier may charge collocators for construction of new walls, structures, or entrances for separate space. *See* 2nd Notice at ¶¶ 97-98. This issue should be left to the state commission to decide whether the costs of such construction are "reasonable security costs" related to collocation or are general building construction costs that the incumbent local exchange carrier normally should bear.

exchange carriers build expansions to existing central offices, they typically plan for a section of the new facility to become a collocation area. Provided that such space is not technically inferior to space elsewhere in the central office, there is no reason to prohibit the incumbent local exchange carrier from providing separate space that is dedicated to collocation.

The Commission should not require the incumbent local exchange carrier to place collocated equipment in the same room as its own equipment, because of the security issues it raises. *See* Declaration of David G. Maples, an independent security expert, which appears in Attachment C. In addition, virtual collocation is available where separate collocation space is exhausted. The largest amount of wasted space in a central office typically is in the collocation area. As is shown in the Poling Declaration, an average of 70 percent of the space that has been assigned to collocators in Verizon central offices remains unused, even where the collocation arrangements have been in existence for a year or more. This is a far higher percentage of unused space than exists in the rest of the central office. Accordingly, incumbent local exchange carriers should be allowed to reclaim the unused collocator space, with notice, and provide it to other collocators. But the incumbent should not be required to shoe-horn cageless collocation in its own part of the building, reducing the space for its own equipment and creating security issues, when there is plenty of unused space in the collocation area. As discussed above, the collocators may not lawfully be given rights that are superior to the incumbent's. Accordingly, the Commission should require existing collocators to allow "cageless" collocation in their own unused space before the incumbent is required to place collocator equipment on the same floor as its own.

Where collocation is placed on the same floor as the incumbent's equipment, the incumbent should be allowed to erect security barriers to protect its equipment. As is

demonstrated in the Maples Declaration, segregation of collocator equipment is the only effective means of providing security in a collocated environment.

V. Commingling Of Collocator Equipment In The Same Bay Or Rack With The Local Exchange Carrier's Equipment Is Contrary To The Act.

The Commission does not have authority under the Act to require an incumbent local exchange carrier to permit a collocator to place its equipment on the same bay or rack with the incumbent's own equipment. Although the D.C. Circuit affirmed the Commission's authority to require "cageless" collocation and to reduce the minimum amount of space for a collocation arrangement, *see GTE*, 205 F.3d at 426, it did not approve commingling of the collocator's equipment with the incumbent's. Such a requirement would destroy the distinction between physical collocation and virtual collocation in section 251(c)(6) of the Act and contradict the fundamental principle of statutory construction that every term in the Act must have meaning. *See Reiter v. Sonotone Corp.*, 442 U.S. 330, 339 (1979) ("in construing a statute we are obliged to give effect, if possible, to every word Congress used").

The fundamental characteristic that distinguishes physical collocation from virtual is that, with physical collocation, the incumbent local exchange carrier assigns a portion of the floor space in the central office to the collocator for its exclusive use to install, operate and maintain its own equipment. *See Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, First Report and Order*, 11 FCC Rcd 15499, ¶¶ 559, 565 (1996). In contrast, virtual collocation does not dedicate floor space to the collocator. With virtual collocation, the incumbent local exchange carrier dedicates certain equipment in its own bays and racks to the collocator's use, but the collocator is not assigned floor space, and it does not have the right to install, maintain, or repair that equipment. *See id.*

Congress recognized that there might be situations where there is no space available for assignment to a collocator in a particular central office. Accordingly, section 251(c)(6) provides that "the carrier may provide for virtual collocation if the local exchange carrier demonstrates to the state commission that physical collocation is not practical for technical reasons or because of space limitations." The only way that space limitations could preclude physical collocation but not virtual is if virtual took up less space than physical. However, if the Commission required an incumbent local exchange carrier to provide physical collocation in the same bays and racks as its own equipment, physical collocation would take up precisely the same amount of space as virtual. There would be no conceivable situation where there would be space for virtual collocation, but not for physical. This would make the statutory language meaningless. Clearly, such an interpretation would impermissibly "diverge . . . from any realistic meaning of the statute" *Massachusetts v. Dept. of Transp.*, 93 F.3d 890, 893 (D.C. Cir. 1996) and violate the principle that every term in the statute must be given meaning. *See Boise Cascade Corp. v. EPA*, 942 F.2d 1427, 1432 (9th Cir. 1991).

Nor can a commingling rule meet the statutory standard of being "necessary" for interconnection or access to unbundled network elements. Virtual collocation is available in the same bays or racks as the incumbent's equipment, and it provides the same functions as physical collocation. The collocator can provide the same equipment in a virtual collocation arrangement that it would install in a physical collocation space, and the Commission requires the incumbent to install, repair, and maintain that equipment within the same time periods and with failure rates that are no greater than those that apply to its own equipment. *See* 47 C.F.R. § 51.323(e). Commingling of physical collocation when the incumbent runs out of physical collocation space is simply not necessary given the capabilities of virtual collocation.

In addition, as is explained in the Maples Declaration, such commingling would pose insurmountable security problems. The Commission has found that "protection of the [local exchange carrier's] equipment is crucial to the incumbent's own ability to offer service to their customers," and its rules permit the local exchange carriers to establish reasonable security measures for collocation, such as security cameras or other monitoring systems. *See First Report and Order and Further Notice of Proposed Rulemaking*, 14 FCC Rcd 4761, ¶ 48 (1999). However, such measures, and any other security measures that could be installed at a reasonable cost, would be totally ineffective in a commingled environment. With commingling, every square foot of the central office would have to be covered by cameras, since the competitive local exchange carrier's equipment could be collocated anywhere. Even if this were done, the collocator's equipment would be so close to the incumbent's that it would be impossible to detect, much less prevent, accidental or intentional damage to the incumbent's equipment. *See* Maples Declaration, Att. C-1. Moreover, the costs of such extensive surveillance would be prohibitive.

Also, commingling would impair the safety and reliability of the incumbent's network. As is shown in the Poling Declaration, many of the collocation arrangements do not meet Verizon's quality standards for equipment installation. Cables are often improperly secured and improperly routed, making failure more likely and repair more difficult. At present, such deficiencies are solely the collocator's problem, because physical collocation is separate from the incumbent's equipment, and any resulting outage or interference would affect only the collocator's customers. However, if those cables were laid on or around the incumbent's equipment in a commingled environment, it would adversely impact the reliability of the incumbent's network as well.

For these reasons, commingling of collocator equipment with the incumbent's is not "a practical solution to space shortages." 2nd Notice at ¶ 101. The Commission should retain its current rule, which is consistent with the statutory standard, that virtual collocation be provided when there is no more floor space in a central office for physical collocation.

VI. The Incumbent Local Exchange Carriers Need More Time, Not Less, To Provision Collocation.

The Commission's proposals to shorten the prescribed collocation provisioning interval for certain less difficult types of collocation arrangements is based on the mistaken premise that the 90-calendar day interval can actually be met for the average collocation arrangement. As Verizon demonstrated in its petition for reconsideration (a copy of which appears in Attachment E), the 90-day interval cannot be met on a consistent basis even for already conditioned space, and it is totally unrealistic for unconditioned space or where special construction is necessary. Nor has any state or incumbent carrier adopted the 90-day interval for all installations that the Commission adopted. The Commission should not prescribe collocation intervals that are shorter than those adopted by the state commissions such as New York, which the Commission noted with approval in granting Verizon's application for long distance authority. *See Application by Bell Atlantic New York for Authorization Under Section 271 of the Communications Act to Provide In-Region, InterLATA Service in the State of New York*, 15 FCC Rcd 3953, ¶ 74 & n.157 (1999).

By suggesting shorter intervals for certain types of collocation arrangements, the Commission implies that a 90 day interval is sufficient under all circumstances. However, as shown in Verizon's reconsideration petition and supporting declarations, even under "ideal" conditions – where space is already conditioned, the incumbent local exchange carrier does not construct a "cage," the collocation arrangement is an addition to an existing arrangement, etc. – it