USTA believes that the specific terms and conditions are best and most efficiently resolved through the negotiation and arbitration process. If there are disputes, the States have experience in applying the "just and reasonable" standard in concrete factual situations. Instead of trying to anticipate all situations with abstract rules, the Commission should leave the explication of these terms to the states.

(3) Equal in Quality.

Section 251(c)(2)(C)'s requirement that interconnection provided by an incumbent LEC be "at least equal in quality to that provided by the [incumbent LEC] to itself" does not present any need for further Commission development of criteria to be included in a national standard. Such quality determinations are best left to the case-by-case determinations of the negotiation process, and arbitration by the states if necessary.

b. Collocation.

Section 251(c)(6) states that incumbent LECs must provide for the collocation of equipment necessary for interconnection or access to unbundled network elements, except that a carrier may provide for virtual collocation if the LEC demonstrates to the State that physical collocation is not practical for technical or space reasons. In implementing this obligation, the Commission poses a variety of questions aimed at establishing "national guidelines" on physical and virtual collocation, including whether it should re-adopt its previous standards governing physical and

virtual collocation established in the Expanded Interconnection proceeding.[24]

In general, collocation under the 1996 Act is a state matter. To the extent that the Commission decides to implement collocation guidelines for the states to follow, USTA recommends that the Commission re-adopt the standards from its Expanded Interconnection proceedings (i.e., prior to the Virtual Collocation Expanded Interconnection order). The collocation policies articulated in that series of proceedings were based on an extensive record and adopted after considerable study.[25] Nothing in the 1996 Act requires the Commission to revisit these policies.[26] At the same time, the Commission should clarify that any duty to provide physical collocation does not equate to the requirement that incumbent LECs tariff such arrangements or provide averaged rates

---

[24]See Virtual Collocation Designation Order, 10 FCC Rcd 11116 (1995); Memorandum Opinion and Order, Expanded Interconnection with Local Telephone Company Facilities, 9 FCC Rcd 5154 (1994); Order Designating Issues for Investigation, Local Exchange Carriers' Rates, Terms, and Conditions for Expanded Interconnection for Special Access, 8 FCC Rcd 6909 (1993); Report and Order and Notice of Proposed Rulemaking, Expanded Interconnection with Local Telephone Facilities, 7 FCC Rcd 7369 (1992) ("Special Access Interconnection Order").

[25]USTA notes, however, that these collocation policies were applicable on a mandatory basis only to Tier-1 LECs. To the extent that these measures would be extended to non-Tier-1 LECs under the 1996 Act, the Commission should be mindful of the additional burdens.

[26]Regardless of whether Congress granted statutory authority to the Commission to order physical collocation for local interconnection, Congress did not and cannot address whether such action would constitute a "taking" under the 5th and 14th Amendments of the Constitution, or the appropriate measure of compensation for carriers forced to physically collocate their facilities with competitors.

for them. Instead, each request for physical collocation may be negotiated to allow the parties to address their unique requirements. Also, the Commission should more flexibly apply its overhead standard to align with other comparable services and not prescribe a single overhead loading.

In this regard, USTA notes that the issues the Commission addressed in the Expanded Interconnection docket included the locations where LECs should be required to offer physical collocation. These include central offices, tandem switching locations, and remote nodes that serve as rating points for switched transport (subject to space availability). The Commission specifically determined that collocation at other types of remote nodes is infeasible, because of (1) their small size; (2) network security problems; (3) they generally serve only limited functions; and (4) the lack of competitive value to the interconnector.[27] The legislation has introduced no intervening circumstances that alter this assessment; thus, the Commission should not mandate expanded interconnection at such locations, but instead should allow parties to negotiate such arrangements.

c. Unbundled Network Elements.

Section 251(c)(3) requires the incumbent LEC to provide a requesting telecommunications carrier with unbundled access to "network elements" at any technically feasible point. Section 251(d)(2) in turn provides that the Commission will

---

[27] Special Access Interconnection Order, 7 FCC Rcd at 7418 & n.244.

"determine[e] what network elements should be made available for purposes of subsection (c)(3)."

The 1996 Act requires the Commission to identify a minimum set of network elements that should be unbundled.[28] The Commission's proposal to move beyond this role, however, and to become actively involved in setting the terms, conditions and technical standards for network unbundling is unwarranted and not sanctioned by the 1996 Act. In USTA's view, the advantages that the Commission cites as justifications for increased intervention, e.g., uniformity in negotiations or network and equipment interoperability, would be more than offset by the impingement on the structure of voluntary negotiation and state arbitration set up by the 1996 Act. The parties to the negotiation process are best positioned to achieve efficient outcomes based on their business needs; the Commission's desire to narrow the bargaining range by dictating substantive terms in fact could skew efficient negotiation outcomes.

To the extent that the Commission addresses issues of unbundling process beyond identifying certain "minimum" elements to be unbundled, it should focus not on dictating the substantive terms of unbundling arrangements, but instead on the development of

---

[28]See NPRM at ¶ 77. As noted above, to the extent the Commission sets network element standards, the process should have two effects. First, incumbent LECs presumably will be required by the states to comply with the Commission's minimum requirements. Second, and just as important, if the incumbent LEC does comply, its compliance should serve as a "safe harbor" to establish a presumption that the requirements for state approval of the agreement under Section 252(e) of the 1996 Act have been met.

a fair, request-based model that frames the negotiation process.[29] The BFR process that USTA has proposed is one such approach.[30]

(1) Network Elements.

"Network element" is a defined term in the 1996 Act meaning "a *facility* or *equipment* used in the provision of a telecommunications service," and includes the features, functions, and capabilities of such equipment or facility. 1996 Act § 3(a)(29) (emphasis added). The Joint Explanatory Statement explains that "[t]he term 'network element' was included to describe facilities, such as local loops, equipment, such as switching . . . that a local exchange carrier must provide for certain purposes under other sections of the conference agreement." Joint Explanatory Statement at 116. Section 251(c)(3) requires the incumbent LEC to provide access to such elements in a manner that allows the requesting carriers to combine them in order to provide a telecommunications service. The Commission has raised three issues with respect to the definition of "network element."

First, the Commission states its belief that a "broad definition" of network element could encompass an entire local

---

[29]Such request-based processes, for example, have been adopted in New York, Maryland, and Florida. See NPRM at ¶ 81.

[30]To the extent that the Section 271 competitive checklist requires access to unbundled elements to be provided in accordance with Sections 251 and 252, see Section 271(c)(2)(B), the Commission should clarify that it is enough for parties to have begun negotiations over such unbundled elements within the parameters of the BFR process. Protracted unbundling negotiations should not artificially restrain RBOCs from entering the interLATA services market if they have otherwise complied with the Section 271 requirements.

loop, for example, as a single network element, or could comprise several network elements. NPRM ¶ 83. USTA agrees that the set of network elements that the Commission identifies should be broad and defined reasonably to cover basic network components, acknowledging that parties or the States are free to go farther than the Commission's minimum standards. Thus, in the loop example posited by the Commission, USTA proposes below that the minimum standard for this network element be defined only in terms of the "local loop," without further subdivision at the federal level.

Second, the Commission seeks comment on the distinction drawn in the network element definition between "facilities or equipment used in the provision of a telecommunications service" and the service itself. Id. ¶ 84. USTA believes that the Commission is correct in noting the distinction, which follows from a plain reading of the statute. Moreover, as explained in Section II.B.2.e.(1) infra, the Act's demarcation of the term telecommunications service as jurisdictionally distinct from a network element is another important reason why the interexchange carriers' interpretation of the Act to bypass the Commission's access charge regime is without merit and should be rejected.

Third, the NPRM requests comment on the relationship between Section 251(c)(3), which addresses unbundling, to Section 251(c)(4), which addresses the resale of incumbent LEC services. The contrast is important since, as the NPRM suggests, some carriers (most notably, the IXCs) have taken the position that Section 251(c)(3) allows them to assemble unbundled network

elements at less than full cost-based rates to reconstruct and provide retail services offered by incumbent LECs. This attempt to evade the 1996 Act's resale provisions plainly contravenes both the language and the intent of the 1996 Act.

Incumbent LECs under Section 251(c)(4) must offer retail telecommunications services for resale at wholesale rates. Section 252(d)(3) vests the states with authority to determine wholesale rates for purposes of Section 251(c)(4) and to establish reasonable limitations on retail services offered at wholesale. Under the Section 252(d)(3) pricing standard, services available for resale generally must be provided to competitors at wholesale rates that are based on the retail rates charged to subscribers, excluding any portion of those rates attributable to costs that will be avoided. By contrast, network elements have no existing retail rate and are sold not to end users but to other carriers. For this reason, network elements have a different pricing standard set forth in Section 252(d)(1), which is "based on cost" plus a reasonable profit.

The IXCs and other carriers wish to evade the resale pricing standard by claiming that the 1996 Act allows them to buy network elements and assemble them into retail services using only the LEC's network. This interpretation would permit those carriers to engage in arbitrage between the resale and interconnection and unbundling provisions of the Act. Such a construction makes little legal or policy sense because it in effect would read the

Section 251(c)(4) resale provision and its accompanying pricing standard out of the Act entirely.

Moreover, the IXC argument flatly contravenes the 1996 Act's goal of promoting facilities-based competition. The underlying logic of the resale provision is to provide new entrants with the ability to enter the market on a resale basis, while preserving their incentives to deploy their own local networks. Once a competitive network is deployed, that provider will cease using resale since the competitor presumably will be able to provide service at a lower cost than could be achieved by merely buying services wholesale.

On the other hand, if IXCs and other carriers were permitted to offer service simply by buying piece-parts of incumbent networks, and those piece-parts were priced at incremental cost, they would never have incentive to build networks of their own. Furthermore, they could completely undercut the prices of other emerging facilities-based carriers who are forced to charge higher rates to recover the joint and common costs of their network deployment and operation.

Accordingly, USTA urges the Commission to clarify that the term network element does not include any service that is a telecommunications service under the Act.[31] To the extent that a

---

[31]Thus, carriers could not bypass the Section 251 resale obligation by seeking to offer so-called "vertical services," such as custom calling or call waiting under the unbundling price standard. These clearly are retail communications services and not unbundled network elements, requiring such carriers to pay retail prices less avoided cost. See 1996 Act § 251(d)(3).

carrier seeks to purchase multiple unbundled "elements" to resell a "service," that carrier requesting should be required to comply with the resale provisions specifically tailored by Congress to address that activity.[32]

(2) Access to Network Elements.

Section 251(c)(3) requires incumbent LECs to provide "access" to network elements "on an unbundled basis." The Commission has interpreted these terms to require incumbent LECs for a fee to provide requesting carriers with the ability to obtain a particular element's functionality, e.g., a local loop's function of transmitting signals from a LEC central office to a customer's premises, separate from other network elements, such as the local switch. NPRM ¶ 86. In addition, the Commission reads the term unbundled to suggest that there must be a separate charge for each network element purchased. Id. USTA agrees with the Commission's interpretation on these points; the fundamental question of what cost standard should be applied with respect to such unbundled elements is addressed in Section II.B.2.d. below.

The NPRM next poses a series of questions relating to the requirement that incumbent LECs provide access to network elements on an unbundled basis "at any technically feasible point." Id.

---

[32]USTA also notes that because the resale obligation is expressly limited to "telecommunications services" that a LEC provides at retail to end user subscribers, it should not be read to include administrative, operational or marketing support, or other services that incumbent LECs provide to carriers but not to end user subscribers. While incumbent LECs may well agree to provide such services, voluntarily, they are not required to do so under the Act.

¶ 87. Once again, USTA strongly urges the Commission to avoid the temptation to atomize the local exchange network into piece-parts. Minimum standards set by the Commission are just that; they do not preclude the parties to interconnection and unbundling negotiations from reaching a more detailed result. They do, however, preserve the incentives for competitors to continue to build out their own competitive networks. If the Commission pieces out the network radically -- in the manner that the IXCs suggest, for example -- it will at some point become more economical for carriers to free-ride on incumbent LEC facilities instead of merely adding specific elements to their own emerging facilities. This is not what Congress intended in crafting the Act's unbundling provisions, and it is not in the public interest.

Finally, in addressing the issue of which "network elements" should be made available under subsection (c)(3), Section 251(d)(2) requires the Commission to consider whether access to network elements that are proprietary in nature is necessary and whether the failure to gain access to the network elements in question would impair the ability of the requesting carrier to provide the services that it seeks. USTA believes that these proprietary network considerations should be explicitly included within the context of the BFR process as factors that may be appropriately invoked by incumbent LECs in processing unbundling requests.

The NPRM acknowledges (at ¶ 11) that Congress "plainly intended for LECs in the future to be vigorous competitors, to continue to offer high quality service, and to play a vital role in

delivering universal service to all Americans." Specifically, Congress recognized in Section 251(d)(2) that LECs must have the ongoing ability to differentiate themselves from competitors by deploying proprietary network elements. Denying incumbent LECs the ability to deploy proprietary elements will serve only to stifle technological innovation, since there is little incentive for incumbent LECs to invest in development and deployment of new or unique network elements if the effect is simply to benefit their competitors. Correspondingly, stifling incumbent LEC differentiation will discourage new competitors from developing their own competitive local exchange facilities, which is simply not the intention of the 1996 Act.

(3) Specific Unbundling Proposals.

The Commission has tentatively identified four network elements to which incumbent LECs must provide access on an unbundled basis under Section 251(c)(3): local loops, local switching, local transport/special access, and databases and signalling systems. Each proposed element is addressed below.

(a) Local loops

USTA supports the Commission's proposal to define local loops as unbundled network elements. Local loops are expressly identified in the Joint Explanatory Statement (at 116) as examples of network elements, and Section 271(c)(2)(B) calls for the

unbundling of local loops from local switching or other services as a precondition for BOC provision of in-region interLATA service.[33]

Specifically, USTA supports a minimum standard that would require incumbent LECs to provide upon request individual transmission links from their central offices to customer premises regardless of the technology involved. USTA would define an unbundled loop as follows:

> **Unbundled local loop** -- The transmission path from a point of interconnection determined by the incumbent LEC in the serving central office to an appropriate demarcation point on an individual customer's premises.

USTA believes that this functional definition serves the public interest. It is specific enough to accommodate competitors' unbundling requests, but importantly, does not dictate any specific loop configuration. Such configurations vary depending on the identity of the requesting carrier and the nature of the service provided.[34]

While the NPRM acknowledges the appropriateness of a functional formulation, it also suggests that the definition may be only a "first step in a process of providing new entrants with meaningful facilities with which to compete," and queries whether

---

[33]Furthermore, several states have ordered, and the LECs currently offer, loops unbundled from local switching. See NPRM at ¶ 94 & n.131.

[34]For example, an unbundled loop requested for the offering by a competitor of basic local exchange services could be provisioned via straight copper, interfaced copper, a channel derived from a metallic pair gains system, or a channel derived from a fiber-fed pair gain system. Unbundled loop service could also be requested to support a variety of different technical parameters, such as digital service or ISDN.

the Commission should move beyond it to require further unbundling of the local loop into subloop elements. NPRM ¶¶ 95, 97. USTA urges the Commission not to do so. Congress has expressly cited "local loops" as a primary example of the type of "facilities" contemplated within the definition of "network element." Although it is theoretically possible to define subloops as "facilities" under the network element definition, Congress presumably could have and would have done so if it thought further subdivision were necessary to effectuate the goals of the Act.

Furthermore, the fact that Congress did not do so makes perfect policy sense. Just as there is no one standard configuration of a local loop, there is no standard configuration of subloop elements. In this sense, the NPRM's inquiry with respect to "technically feasible" subloop elements is somewhat misplaced. The technical feasibility of providing access to a subloop element is critically dependent upon the manner in which the larger loop itself is configured.[35] As Dr. Jackson has observed:

> Voice grade loop transmission is a reasonably well-defined quantity with standard interfaces (such as main distribution frames) at the central office and the network interface devices at the subscriber premises. Sub-loop transmission elements are not as well defined -- nor do they have standard interfaces.

---

[35]Mandated subloop unbundling at interface locations, for example, apart from creating enormous physical and administrative problems, is largely meaningless since not all outside plant is interfaced (i.e., it does not provide a natural point of distinction between feeder and distribution facilities). Similarly, it would make little sense to order unbundling at a multiplexing or concentration point, see NPRM at ¶ 97, since that function simply is not present in every transmission path from an end office to a subscriber's premises.

Jackson Affidavit ¶ 6. Because loop configurations today can vary tremendously, Commission presumption of a certain subset of elements under the loop that "must" be opened to interconnectors in effect will dictate a de facto loop configuration that would place a wholly unnecessary and inefficient constraint on network design.

Third, and in any event, to USTA's knowledge no LEC has developed, tested or implemented subloop unbundling[36] precisely because of the serious questions surrounding its technical feasibility. These include:

> (1) Enormous upfront development and implementation costs, e.g., with respect to implementation processes and database modification; startup costs of new hardware and manpower required for interconnection and testing at each field site; and ongoing costs of testing and maintenance;
>
> (2) Outside plant architecture that to date simply has not been not designed or constructed for interconnection or use in a multi-LEC environment -- For example, there is limited, if any, space in manholes and conduit, splicing cases, Controlled Environmental Vaults ("CEVs"), or Stratus-Computer's-PBX-Switch-to-Stratus-Computer-Application-Interface ("SAI")/cross-connect boxes to accommodate outside interconnectors at these points;
>
> (3) Rights-of-way and real estate specifically designed for a single provider network -- If subloop unbundling is required, additional real estate would need to be purchased to accommodate interconnection; and
>
> (4) Serious safety, security and access issues that must be addressed in order to accommodate third-party access to LEC facilities, and to ensure the ongoing safety of both employees and the public at large (e.g., access to manholes and CEVs).

There are, to be sure, points at which the existing network is conducive to interconnection, such as the LEC central office and the designated customer premises. These points, however, are

---

[36]This includes in Hawaii and Illinois. See NPRM at ¶ 97.

squarely encompassed within USTA's proposed definition of an unbundled loop. The case for further subdivision simply has not and cannot be made at this time. The 1996 Act requires access to unbundled network elements, but it does not require LECs to redesign and reconfigure their networks in response to each individual request. Indeed, this result would defeat the very purpose of promoting independent facilities-based competition that the Act was designed to achieve.

While USTA has no objection to subloop unbundling being broached and negotiated through the BFR process, it makes no sense for the Commission to mandate subloop unbundling when incumbent LECs themselves have not figured out how to implement it. In the absence of any demonstrated need to do so, the Commission should require only the minimum standard of local loop unbundling, a standard that is technically and economically feasible, and administratively workable.

(b) Local Switching

The second element the Commission has defined is "unbundled switching capability," which USTA also supports. NPRM ¶ 98. The Joint Explanatory Statement (at 116) cites switching equipment as another primary example of a network element, and the Section 271(c)(2)(B) competitive checklist specifies the unbundling of local switching from transport, local loop transmission and other services another precondition of BOC provision of in-region interLATA service.

As the Commission observes (NPRM ¶ 99), it is difficult to identify or define the use of switching equipment for a particular customer given the fact that local switching equipment is often shared by thousands of customers, and the 1996 Act is silent as to how the unbundling of switching should be accomplished. USTA believes that the Act is best effectuated by a minimum standard for unbundled switching that is defined as access to a switching "port." Technically, a port is the physical connection between the loop and the switch. According to the port model, which has been adopted in New York, Maryland and several other states, a competitor buying a port would obtain a physical connection with the LEC network and certain basic functions, such as voice and dialtone. In addition, the competitor would obtain access to certain basic functions and capabilities provided by the switch. The port thus would provide competitors with unbundled switching functionality. It would provide connectivity to switching associated with telephone lines and numbers, line-to-line switching capability, line-to-trunk switching capability, and inter-local switch connectivity. It would not, however, include vertical services such as custom calling.[37]

USTA believes that this definition is workable and serves the public interest. It is also entirely consistent with the statute. As the Commission observes, Section 251(c)(3) requires incumbent LECs to provide elements in a manner that allows carriers to

[37]Competitors would have to pay retail rates less avoided cost for such vertical services, as called for by Section 252(d)(3) of the Act.

combine them to provide telecommunications services. Adopting the port approach to unbundled switching affirmatively facilitates this goal by permitting carriers to package loop or local switching with their own facilities, and then to resell whatever vertical service offerings they wish to end users.

On the other hand, the Commission should reject any proposal that would define switching in terms of *capacity*. See NPRM at ¶ 99. Capacity in a switch can be expressed in terms of the number of line terminations; the number of trunk terminations; the quantity or capacity of intra-switch transport; usage; or switch processor capacity. Furthermore, each of these measures of switching capacity is continually affected by how the other aspects are utilized. For example, while there may be a seemingly unlimited number of line terminations, the specific manner in which those lines are utilized affects trunk terminations, usage, machine throughput and processor occupancy limits. There simply is no single, meaningful measure of "capacity" that is usefully applied to local switching.

More fundamentally, the switching element should not be defined in a manner that is inconsistent with the way that LECs have designed and configured their networks. The IXCs have claimed, for example (and the claim is reflected in the NPRM), that the Act permits and even requires dissection of an incumbent LEC's switch into some fraction of "capacity," however that term is defined. In so doing, the IXCs attempt to re-cast retail or vertical services offered by incumbent LECs as "network elements"

in order to obtain them under the unbundling rather than the resale pricing standard. Yet, as the Commission itself has acknowledged, a network element is that which a carrier needs to provide a telecommunications service; it is not a "service" unto itself. Vertical features such as custom calling or call waiting are not network elements. Instead, they are retail telecommunications services, and as such, should be provided to the carriers that desire them via the resale provisions of Section 251(c)(4).

Thus, the Commission should not permit strategic use of the 1996 Act's unbundling provisions in a manner that would eviscerate the Act's resale provision and its pricing standard. To say that such a reading is mandated by the Act or to suggest that such a reading advances its goals is an ill-conceived distortion of Congressional intent.

(c) Local Transport/Special Access

The Commission also proposes to require incumbent LECs to provide access to unbundled transport facilities as network elements. The Commission has concluded that the unbundling of local transport and special access facilities is technically feasible, noting that its action in the *Expanded Interconnection* proceeding effectively required substantial unbundling of these facilities. The Commission specifically has proposed to require unbundling of LEC facilities that correspond to the current rate elements for transport and special access. NPRM ¶¶ 104-105. USTA supports this position.

(d) Databases/Signalling Systems

Incumbent LECs' signalling systems and databases are specifically included in the definition of network element in Section 3(29), and the 1996 Act requires BOCs to provide access to "databases and associated signaling necessary for call routing and completion" before they are permitted to enter the long distance business. See 1996 Act § 271(c)(2)(B)(x).

With respect to SS7 networks, the existing point of interconnection for incumbent LECs and third parties is the signal transfer point ("STP"). The STP was designed, in part, to be the entry point into the SS7 network, and interconnectors can obtain access to all SS7 functions through it. USTA also notes, however, that access to other locations on the SS7 network is not technically feasible. The STP provides necessary routing and translation functions that are not replicated in the signal control point ("SCP") or any other location in the SS7 network.[38]

d. Pricing of Interconnection, Collocation and Unbundled Network Elements

(1) The Commission's Authority to Set Pricing Principles.

The Commission suggests that, in order to ensure that the rates for interconnection, collocation and unbundled network elements are "just, reasonable, and nondiscriminatory," it has authority to set "national pricing principles" without regard to

[38]These functions include: load management, to facilitate and control the flow of traffic through the SS7 network; message screening, to prevent unusable messages from reaching the SCP or the switch; and security/protection of proprietary information.

"jurisdictional distinctions between interstate and intrastate services and facilities." NPRM ¶¶ 117-120. This can be true, if at all, only in a very limited sense. Whatever "principles" the Commission establishes must not supplant the prominent functions the Act assigns to private parties and to the states.

The Act requires that the specific prices for interconnection and unbundled network elements will be set, not through FCC regulation, but through private negotiation, § 252(a)(1), subject to "[d]eterminations by a State commission of the just and reasonable rate for the interconnection of facilities and equipment for purposes of [§ 252(c)(2)], and the just and reasonable rate for network elements for the purposes of [§ 251(c)(3)]." § 252(d)(1) (emphasis added). Should the Commission issue detailed prescriptions on rate levels, rate structures, and cost calculations, it will trivialize the roles assigned to private negotiations and the states under section 252(d)(1). National pricing rules should thus be sufficiently broad to preserve room for genuine negotiation and for the "critical role" of the states acknowledged in the NPRM (¶ 118).

(2) Statutory Language.

Section 252(d)(1) provides that the rates for interconnection and unbundled elements should be cost-based and nondiscriminatory, and may include a reasonable profit. The Act, however, prescribes no specific levels or measures of rates, nor does it authorize the Commission to do so. That is left to negotiation of the parties subject to arbitration by the states. The Commission's role should

not extend beyond explicating, in general terms, the basic statutory terms. It is then up to the parties and the states to apply those terms in light of particular circumstances.

There are several basic principles that should guide the Commission in its explication of these terms.

(a) The Commission should not establish a rigid price formula. The Commission should not, in articulating the statutory terms, establish a rigid price formula to be applied to every service in every area. Aside from being unworkable, such a national formula could not take account of market and regulatory conditions in individual areas or of variations in the competitiveness of particular services. Prices will be too high in some areas and for some services (inviting competitive losses as other entrants provide those services below the LEC's mandated price umbrella) and too low in other instances (inviting inefficient entry). That is exactly why the statute gives such latitude to individual negotiations and to state arbitration. At most, the Commission should articulate broad parameters -- a price floor and a price ceiling -- within which the process contemplated by the statute will work.[39]

(b) Any price ceiling must permit recovery of total firm costs. As a fundamental economic matter, a firm that does not have prices that produce revenues sufficient to cover its total costs

[39]Even these broad parameters are best applied only to the large LECs. Rural LECs and LECs eligible for the two percent waiver process under Section 251(f) should be subject to a flexible price guideline.

over the long run cannot stay in business. Affidavit of Professor Jerry A. Hausman ¶ 3 ("Hausman Aff."). Although the Act does not define costs, it is apparent from the text that a LEC should be able to recover its total costs of providing a particular service or network element. Indeed, a rate that does not even cover the total firm cost of providing a service or element obviously cannot contain the profit that section 252(d)(1)(B) of the Act finds to be just and reasonable and says that the states may permit. Thus, a Commission regulation precluding a reasonable profit, by limiting the LECs to some subset of total costs, would effectively read section 252(d)(1)(B) out of the Act.

(c) Total costs include joint and common costs. For a single-product firm, the price that enables the firm to recover its costs is simply the firm's operating and production expenses (including its cost of capital) divided by output of the firm's product. For multiproduct firms like LECs, where the sum of revenues for the firm's products must at least equal total costs, calculating the price that will recover the cost for each individual product is more complicated. The total cost a LEC incurs in producing a local network service -- which must be recovered by the total service revenues -- includes, at a minimum, the following elements: (i) the direct or "incremental" costs of providing the specific service in question; (ii) the "joint costs" shared by a particular group of services, which must be incurred even if any one service in the group were to be discontinued; and (iii) the "common costs" of capital, labor, administrative

overhead, and the like that are necessary to run the firm as a whole, which are not incremental to any individual service or to any specific group of services, but are incurred so long as the firm is operating at all. Hausman Aff. ¶ 8.

(d) Total costs should reflect actual, embedded costs. Even accounting for all forward-looking costs is not a sufficient measure of total costs. Embedded costs due to past investments in the network must also be recovered. Networks evolve over time and will never contain only the very latest technology. Yet the LECs have incurred substantial costs in building the existing infrastructure and should not be saddled with ex-post facto regulatory revisions that bar prices that recover those legitimate costs. Hausman Aff. ¶¶ 10-15. If new competitors want to use the LECs' embedded plant, then they should pay for the embedded plant, not for some ideal network that they are not using, that doesn't exist, and that will never exist.

Although the Act prohibits regulators from engaging in rate-based proceedings to determine embedded costs of incumbent networks, it does not limit recovery only to forward-looking costs. See S. Rep. No. 23, 104th Cong., 1st Sess. 21 (1995) (reference to "rate of return or other rate based proceeding" describes a type of regulatory proceeding, not a pricing methodology). Section 252(d)(1) simply refers to "cost," without any restriction to forward-looking costs. Such a limitation would, moreover, be incompatible with Section 252(d)(1)(B), which allows recovery of a reasonable profit margin.

(e) Precluding LECs from recovering total costs would create incentives for inefficiencies. In addition to being incompatible with the Act, if the Commission set a price ceiling that generated revenues below total costs, it would provide incentives for inefficient investment. Hausman Aff. ¶¶ 11-12. Such rates will deter LECs from undertaking investments to improve the network because of the considerable risk that costs will not be recovered. Unless regulators permit rates that compensate LECs for investments in their networks, LECs will rationally invest less than would be socially optimal. On the demand side, when prices are set too low entrants will overconsume interconnection and network elements from the incumbent LEC and underinvest in their own facilities, and inefficient firms will be able to enter the market. Prices set only at incremental cost, for example, allow entrants to provide service over the LEC's network without having to bear the joint, common or embedded costs that would arise if competing facilities were built. This result is inefficient and contrary to the Act's purpose of promoting the emergence of facilities-based local competition. The Commission has already recognized that "low charges for interconnection with LEC facilities . . . would give interconnectors false economic signals that could stimulate uneconomic entry." Special Access Interconnection Order, 7 FCC Rcd at 7429 n.291.

(f) Precluding LECs from recovering total costs would be confiscatory. Rate regulations that prevent LECs from recovering their costs of providing interconnection and unbundled elements are

also confiscatory, and as such are subject to scrutiny under the Takings Clause. See Duquesne Light Co. v. Barasch, 488 U.S. 299, 308-10 (1989) ("If the rate does not afford sufficient compensation, the State has taken the use of utility property without paying just compensation and so violated the Fifth and Fourteenth Amendments."); FPC v. Hope Natural Gas Co., 320 U.S. 591, 602 (1944) (to avoid being confiscatory rates must allow carriers to earn returns sufficient to attract investors). Restricting LECs to rates that cannot generate revenues sufficient to cover total costs on LEC investments will lower returns and reduce their ability to attract new capital.

Moreover, rate regulations that fail to account for joint, common and embedded costs would interfere with the expectations on which LECs have based past investment decisions. Decisions about how much switch and loop capacity to build required assessments not only of future revenues to be earned from those facilities but also of the investments required to meet regulatory requirements. For the Commission to decide now, long after those costs have been sunk, to bar compensatory returns undermines the LECs' legitimate, investment-backed expectations. Interference with property rights in a manner that undermines such expectations constitutes a taking. Penn Central Transp. Co. v. New York City, 438 U.S. 104, 124 (1978).

Any interpretation of the Act that effectuates a taking will not survive judicial review under established principles of administrative law. It is well settled that, "[w]ithin the bounds