Subloops

Q. Let's turn to the sixth section of your testimony. Can you please briefly describe Verizon's subloop proposal?

A. Yes. In its testimony, Verizon proposes to provide CLEC access to subloops in accordance with a pre-established Unbundled Sub-Loop Arrangement ("USLA"). [Sanford and Stern, Direct, p. 37] Under this arrangement, CLECs would only have access to the distribution portion of Verizon's network at feeder distribution interfaces ("FDIs"). In order to gain this access, potential customers must first pay a fee to file an application expressing the desire to rent subloops connected to a particular FDI. Verizon will then review this application (which must include detailed calculations of potential future demand for subloops in addition to the number currently needed) and, if approved, will provide a cost estimate for the installation of cable connecting the given FDI with a CLEC Outside Plant Interconnection Cabinet ("COPIC"). [Id., pp. 37-38]. After receiving this estimate, if the CLEC still wishes to proceed with the rental, it will then pay a deposit equal to 50% of the estimated cost of the cable and equipment installation. [Id., pp. 37-38] At the completion of the build-out, the CLEC will pay the remaining portion of the total cost incurred by Verizon, regardless of how high this charge might be.

Verizon also proposes the following:

> In the second stage of USLA provisioning, the CLEC requests the cross-connection of Verizon PA sub-loops from the CLEC end-user to the CLEC feeder facilities at the COPIC. Installation of sub-loops may occur as part of a conversion from Verizon PA retail service or as part of the installation of new service. The CLEC will report the intended use of the sub-loop and request any conditioning (i.e., removal of bridge tap or load coils) at the time of ordering. [Id., p. 38]

To initiate this second stage, the CLEC must pay a one-time non-recurring charge for cross-connection of each subloop, and will commence paying the monthly recurring charges. Each additional subloop rented thereafter will also entail payment of these same non-recurring and recurring charges. [Non-recurring Cost Study, Section 4.2].

Q. Do the terms and conditions associated with the proposal appear to be reasonable?

A. I cannot comment in detail, since Verizon has not filed a proposed tariff for subloops. However, I will offer a few limited comments based upon the impressions I have gained from the Verizon's testimony and other filings, as well as certain generic descriptions of subloops which are published on Verizon's website.

Q. Verizon apparently proposes to only give CLECs the option of renting the entire loop from the customer's premises to the FDI. Do you have any concerns regarding this aspect of its proposal?

A. Yes. This proposal is unduly restrictive, anti-competitive and inconsistent with FCC requirements. The FCC has held that ILECs must provide unbundled access to subloops wherever this is technically feasible. The FCC specifically defines subloops as:

> portions of the loop that can be accessed at terminals in the incumbent's outside plant. An accessible terminal is a point on the loop where technicians can access the wire or fiber within the cable without removing a splice case to reach the wire or fiber within. These would include a technically feasible point near the customer premises, such as the pole or pedestal, the NID (which we discuss below), or the minimum point of entry to the customer premises (MPOE). Another point of access would be the feeder distribution interface (FDI), which is where the trunk line, or "feeder," leading back to the central office, and the "distribution" plant, branching out to the subscribers, meet, and "interface." The FDI might be located in the utility room in a multi-dwelling unit, in a remote terminal, or in a controlled environment vault (CEV). We acknowledge that some FDIs are more accessible than others; utility rooms are generally more spacious than vaults. A third point of access is, of course, the main distribution frame in the incumbent's central office.[UNE Remand Order, paragraph 206].

Q. Why is it necessary to provide a CLEC with a variety of interconnection points to access unbundled subloops?

A. CLECs who only need more limited portions of the loop should be given the option of using and paying for the portion they actual need and use. The FCC has found that:

> lack of access to unbundled subloops materially diminishes a requesting carrier's ability to provide services that it seeks to offer. We also conclude

> that access to subloop elements is likely to be the catalyst that will allow competitors, over time, to deploy their own complementary subloop facilities, and eventually to develop competitive loops. [UNE Remand Order, paragraph 205].
>
> We believe that a broad definition of the subloop that allows requesting carriers maximum flexibility to interconnect their own facilities at these points where technically feasible will best promote the goals of the Act. Access to portions of the loop element at these points, i.e., access to the subloop, will facilitate rapid development of competition, encourage facilities-based competition, and promote the deployment of advanced services. [UNE Remand Order, paragraph 207].

Q. In your opinion, which portions of the loop should be offered to CLECs?

A. In general, CLECs should have the option of renting any portion of the loop. At a minimum, to be consistent with the FCC's requirements and to ensure that the CLEC will not be forced to pay for significantly more loop plant than they are actually using, appropriate standard offering rates should be developed to allow CLECs to rent the following specific portions of the loop:

- Copper feeder from the wire center to the FDI.

- Fiber-based electronic channels from the wire center to the FDI. (This should be offered in DS0, DS1 and DS3 quantities.)

- Copper distribution plant from the FDI to the end use customer. (This is the only portion, which Verizon plans to offer as "subloops")

- Copper distribution plant from the pedestal or terminal to the end use customer. (This excludes distribution cable, but includes all of the drop, building cable or riser cable, as well as the NID).

- The NID. (This is already available in Verizon's tariff, but is listed here for the sake of completeness).

Q. Let's discuss the subloop cost studies. Have you identified any problems with Verizon's development of these costs?

A. Yes. Verizon has developed excessive rates, due to certain problems, which exist in its cost calculations. Specifically, I have identified problems with Verizon's proposed conduit costs, which escalate Verizon's recurring costs and rates. Additionally, there are serious problems with the nonrecurring subloop cost studies, which greatly inflate the proposed nonrecurring rates.

Conduit Costs

Q. Let's discuss conduit costs. Can you explain the problem with this portion of the Company's study?

A. Yes. Verizon has estimated distribution subloop conduit and pole costs by applying the ratio of feeder and distribution cable investment. For instance, if 50% of its cable investment represents distribution cable, it has assumed that 50% of its conduit and pole investment relates to distribution. This is not appropriate, and results in an overstatement of the conduit costs associated with the distribution portion of the loop.

Distribution and feeder cable are not uniformly found among the underground, buried and aerial plant categories. To the contrary, underground conduit is more frequently used for feeder cable, and distribution cable is more frequently buried directly in the ground. This follows directly from the fact that ILECs typically install sufficient distribution cable to serve an area for 30 or more years, while they only install enough feeder cable to accommodate 5 to 7 years worth of growth. As growth occurs, the ILEC will periodically pull additional feeder cable through its conduit system.

This difference in standard engineering practice is reflected in the underground ("UG") plant mix percentage inputs for distribution cable and feeder (both copper and fiber) in all of the national cost models. For example, Table 4 shows the default plant mix inputs used in the synthesis cost model adopted by the FCC. [Fifth Report and Order, CC Docket No. 97-160, October 28, 1998.] The following table shows the analogous plant mix percentages used in the Hatfield (HAI) model.

Table 4
Comparison of FCC Model's Underground
Plant Mix Percentages

Density	UG Distribution	UG Copper Feeder	UG Fiber Feeder
0	0.00%	5.00%	5.00%
5	1.00%	5.00%	5.00%
100	2.00%	5.00%	5.00%
200	4.00%	20.00%	20.00%
650	8.00%	40.00%	40.00%
850	20.00%	60.00%	60.00%
2550	40.00%	75.00%	75.00%
5000	60.00%	90.00%	90.00%
10000	90.00%	95.00%	95.00%

Table 5
Comparison of HAI's Underground
Plant Mix Percentages

Density	UG Distribution	UG Copper Feeder	UG Fiber Feeder
0	0.00%	5.00%	5.00%
5	0.00%	5.00%	5.00%
100	0.00%	5.00%	5.00%
200	0.00%	20.00%	10.00%
650	0.00%	40.00%	40.00%
850	0.00%	60.00%	60.00%
2550	5.00%	75.00%	75.00%
5000	5.00%	85.00%	85.00%
10000	10.00%	90.00%	90.00%

In both cases, for every density cell, the percentage of distribution contained in conduit is less than the percentages of copper and fiber feeder contained in conduit.

Q. Do you have a recommended solution to this issue which relies entirely upon Verizon's own outside plant data?

A. Yes. In order to estimate distribution conduit, it would be appropriate to look at the ratio of underground distribution cable investment relative to total underground cable investment. Similarly, to estimate distribution related pole costs, it would be appropriate to apply the analogous ratio of distribution aerial cable investment to total aerial cable investment. The investment data needed to directly apply this approach to each density cell is not available in the cost study or supporting workpapers provided by Verizon. However, sufficient information is available to develop an estimate of the relative proportions of underground and aerial structures within the feeder and distribution categories within each density cell.

Schedule 2 of my exhibit shows the process I used. I started with the statewide average percentage of underground distribution plant, which was available in proprietary workpapers we received from Verizon. I multiplied this percentage times the average distribution loop lengths in each density cell to develop an estimate of the quantity of underground distribution plant in each density cell. I performed a similar procedure for aerial distribution plant, and used the same approach for feeder. As shown on Schedule 2, this procedure results in an array of distribution and feeder lengths by structure category for each density cell.

The underground distribution distances were then divided by the total underground distances to develop the percentage of underground plant attributable to distribution cable. For example, in Density Cell 1, I estimate that just **[Begin Proprietary]** [**End Proprietary]** of the conduit is attributable to distribution cable; the remaining conduit is attributable to feeder. The resulting percentage factors for distribution are summarized in Table 6. These factors can be applied to total conduit investment in order to estimate the amount of this investment which is attributable to the distribution portion of the loop. The same process can be used to develop analogous factors for feeder, which can be used in developing rates for the feeder portion of the loop.

Table 6
Derivation of Distribution Pole and Conduit Factors
by Density Cell
[Begin Proprietary]

Factors	Density Cell 1	Density Cell 2	Density Cell 3	Density Cell 4

[End Proprietary]

Q. Have you calculated the impact of this approach on the subloop rates?

A. Yes. In general, the effect of this approach is to reduce the amount of conduit costs attributed to the distribution portion of the loop, and to increase the amount attributed to the feeder portion. Table 7 below shows the original monthly USLA (distribution) costs developed by Verizon, as well as the revised cost estimates which result from my recommended aerial and underground percentage factors.

Table 7
USLA Total Monthly Costs
By Density Cell
[Begin Proprietary]

Item	Density Cell 1	Density Cell 2	Density Cell 3	Density Cell 4

[End Proprietary]