

1 **4. General Problems with Approach and Inputs**

2
3 *Fill Factors*

4
5 **Q. Let's discuss in turn each of the specific problem areas you listed earlier. First, are**
6 **the Company's fill factors consistent with a long run approach?**

7 A. No. Fill factors (utilization rates) are estimates of the relationship of plant in use to total plant.
8 The cost of unused plant (spare capacity) is included in the numerator, but it is not considered
9 in the denominator when calculating per unit costs. Hence, the amount of spare capacity in a
10 study will directly impact the resulting unit costs. Excessively low fill factors raise the per unit
11 costs and thus the prices to be charged. The fill factors that the Company uses in its loop and
12 transport cost studies are somewhat higher than its embedded network experience, but lower
13 than would be achievable in a true long run analysis.

14 In a true long run planning horizon, the firm will optimize its capacity to match its output.
15 Using the "scorched earth" approach, the long run analysis looks at the cost of constructing a
16 network built from scratch (or, in the case of "scorched node" *de novo* from existing central
17 office sites) with just enough spare capacity to provide operational flexibility (e.g., the ability to
18 quickly respond to fluctuations in the day-to-day level of demand). In comparison, a somewhat
19 larger amount of spare capacity would normally be present on an actual network for a firm that
20 is operating in the short run. At some locations the firm may have less spare capacity than
21 would be optimal, thereby increasing its total costs of administration and maintenance. At other
22 locations a firm may have more capacity than would be optimal because it has anticipated future
23 growth that has not yet materialized, or because it hasn't accurately estimated the level of
24 demand.

1 In the present proceeding, SWBT bases its cable cost estimates on its existing network
2 data. The Company argues that these factors have been appropriately adjusted, since it has
3 removed half of the non working pairs. While this is certainly a step in the right direction, the
4 Company did not determine the cost-minimizing level of fill which is appropriate in a truly long
5 run planning horizon, where the firm has unlimited flexibility to optimize the network to achieve
6 minimum cost. I will discuss the specifics of this problem in greater detail in the next major
7 section of my testimony, where I examine SWBT's estimates of loop and drop costs. As I will
8 explain in the loop studies section of my testimony, further upward adjustments should be made
9 to SWBT's proposed fill factors, to be fully consistent with a forward-looking, long run planning
10 horizon.

11
12 *Building Factor*

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14 **Q. Please discuss SWBT's estimate of building costs (Issues AA-0001; AD-0004;**
15 **AD-0005; AD-0006). Do you have any concerns about their calculations?**

16 A. Yes. SWBT does not provide an independent estimate of the cost of buildings necessary to
17 provide unbundled loops and other network elements. Instead, it develops a percentage factor
18 that is based upon the cost of SWBT's existing buildings, adjusted upward for the impact of
19 inflation. This approach overstates costs, because it doesn't consider the offsetting benefits of
20 productivity gains and technological changes which are reducing the minimum necessary size of
21 buildings. To be consistent with a long run, least-cost network design (e.g., all digital switches,
22 increased deployment of fiber optics), these reductions in square footage should be considered.
23 In developing forward-looking long run UNE cost estimates, it is appropriate to include only
24 the minimum amount of building space necessary to efficiently provide the network elements in
25 question. I would anticipate that many of SWBT's buildings in smaller cities were originally

1 designed to accommodate, and once housed, operator services and/or retail offices that have
2 now been moved to centralized locations. SWBT's calculations do not appear to adequately
3 adjust for these reduced space requirements. Building space that is now, or once was,
4 associated with the provision of SWBT's services, including retail functions, should be excluded
5 from UNE costs.

6
7 **Q. What is your recommendation regarding SWBT's building factor?**

8 A. I recommend that the Commission reject SWBT's approach, which in effect replicates all of its
9 existing buildings at today's higher construction cost levels. To be consistent with the other
10 aspects of a forward-looking long run cost study, the cost of buildings should reflect the effect
11 of productivity improvements—not just inflation. Particularly in buildings that were originally
12 designed to accommodate older technology switches, operator services, or retail business office
13 functions, substantial reductions in the required square footage would be appropriate for a UNE
14 study, and it certainly would not be appropriate to simply replicate the existing structures at a
15 higher price level.

16 During discovery, we asked the Company to provide information concerning minimum
17 square footage requirements, and the fraction of existing buildings devoted to various functions.
18 Unfortunately, the Company did not provide sufficient information to analyze this issue in
19 greater detail. As a result, we were unable to develop an accurate estimate of what fraction of
20 the existing building space should be removed from a long run UNE cost study.

21 Consequently, I recommend that the Commission allow SWBT to recover the
22 embedded cost of its existing buildings, and no more. In other words, the embedded cost of the
23 existing buildings should not be increased to reflect the effects of inflation, since we don't have
24 sufficient information to determine the appropriate offsetting adjustment for productivity
25 increases and technological changes, or to adequately reflect the distinction between network

1 elements and complete services. A similar approach was recently used by the Missouri
2 Commission:

3 A truly forward looking building factor would have to recognize that
4 fewer and smaller buildings would be used if the network were totally
5 replaced.... For these reasons, Staff recommends using the historic
6 building investment in developing the cost factor.
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8 [Final Arbitration Order, Case No. TO-97-40, Attachment B, p. 6.]

9
10 *Maintenance Factors*

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12 **Q. Please discuss SWBT's maintenance factors (Issue AD-0001). Do you have any**
13 **concerns with the manner in which these factors were developed?**

14 A. At least two aspects of SWBT's approach are questionable. First, in developing forward-
15 looking long run UNE cost estimates, it is appropriate to exclude from the recurring cost
16 studies any maintenance costs that would be performed by the CLEC instead of SWBT, as
17 well as any costs that are recovered through nonrecurring charges paid by the CLEC. It is also
18 appropriate to exclude costs associated with the provision of bundled services to SWBT's
19 customers (both wholesale and retail). The UNE cost studies should be narrowly focused on
20 the maintenance costs that are required to provide unbundled network elements, recognizing
21 that some testing and other maintenance activities may be performed by the CLEC instead of
22 SWBT. I am not convinced that SWBT has adequately adjusted its embedded cost data to be
23 consistent with these criteria. AT&T notes in the Issues Matrix that "SWBT's maintenance
24 factors are based on 1995 booked costs, which include all embedded non-recurring costs and
25 are not adjusted for avoided retail costs." [See SWBT Response to AT&T IR 2-38.] While I
26 have not verified this argument in detail, there seems to be merit to AT&T's claim that

1 “SWBT’s proposed recurring prices would have the CLECs pay SWBT for SWBT’s
2 customers’ non-recurring costs.”

3 Second, I am not convinced that SWBT has adequately adjusted its maintenance cost
4 calculations to reflect the increased efficiencies and lower operating costs that are potentially
5 achievable in the context of an efficient, forward-looking network. Although we did not analyze
6 the maintenance cost factors in detail, we encountered one instance of this problem which leads
7 me to question whether there might be other instances, as well. Specifically, in developing the
8 investment amounts used in its recurring loop cost studies, SWBT assumes that
9 feeder/distribution interfaces (FDIs) are ubiquitously deployed, even though 30 % of its existing
10 distribution pairs do not use FDIs, because for that percentage of loops, feeder cable is directly
11 spliced to distribution cable. (SWBT’s response to AT&T’s Information Request No. 4.4)

12 AT&T’s view, expressed in its comment on Issue Number CA-0016, is that 30 % of
13 the investment in FDIs should be eliminated “because 30 % of loops have no distribution
14 cable.” I disagree. The FDI investment included in the study should not be based upon
15 embedded relationships. Instead, the study should reflect the most efficient, least costly
16 approach to network design, which involves more ubiquitous deployment of FDIs. Unlike
17 AT&T, I don’t object to including the additional investment required to hypothetically use FDIs
18 everywhere. Instead, I accept SWBT’s argument that increased deployment of FDIs is the
19 preferred approach to network design, since it increases flexibility and reduces the cost of
20 accommodating customer moves and changes, as well as growth. If this is in fact the minimum-
21 cost, forward-looking configuration, which seems likely, it is appropriate to reflect this higher
22 level of investment in the recurring cost studies, consistent with the long run concept, as SWBT
23 has done.

24 However, for consistency, SWBT should have made a corresponding reduction to its
25 maintenance and operations costs, in an amount which more than offsets the cost of the extra

1 FDI investment, but there is no indication that such a reduction was recognized. While this is a
2 relatively minor point, it should be corrected. Also, I am concerned that it may be indicative of
3 a broader problem. SWBT has not adequately analyzed their maintenance and operations
4 costs, to ensure that its studies reflect all of the additional cost savings and efficiencies which are
5 achievable in a long run planning horizon.
6

7 **Q. What is your recommendation?**

8 A. To be consistent with long run costing concepts, it is preferable to reflect a more efficient
9 forward-looking system design, with more ubiquitous deployment of FDI's. However, the study
10 should also recognize the offsetting benefits of that design (lower maintenance and operations
11 costs). I therefore recommend that the Commission require SWBT to reduce its plant
12 maintenance factors as necessary, to be consistent with the all-FDI network design. I do not
13 have sufficient information to develop a precise estimate of the impact of this recommendation.
14 However, I have roughly estimated that the Company's buried cable maintenance factor would
15 decline by approximately 1.5 %, from **Begin proprietary***** *****End**
16 **proprietary.**
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