

provided *no justification* for its radically short depreciation lives, nor even any explanation of how its depreciation lives were developed. SWBT’s proposed depreciation lives – as adopted by the MPSC – appear to be based on nothing more than “black box” subject matter “expert” opinions (a handful of which were later arbitrarily adjusted by the MPSC Staff based on “benchmarking” considerations). *See* Staff Report at 94-114; Smith AR/MO Aff. ¶¶ 97-98.

19. SWBT attempts to justify its black box depreciation lives as consistent with the depreciation lives that it uses for financial reporting purposes.<sup>7</sup> But that would only confirm that SWBT’s depreciation lives violate TELRIC principles. The fundamental problem with using financial depreciation lives to compute UNE rates is that those depreciation lives are designed to err on the side of protecting shareholders. They are not designed objectively to estimate the projection lives for regulatory purposes. *See, e.g., Depreciation Order* ¶ 17<sup>8</sup> (noting that “[o]ther federal regulatory commissions, like the Securities and Exchange Commission, operate under their own authorizing legislation and have statutory duties that differ from the requirements imposed on us by the [1996] Act”). As explained by GTE, another incumbent LEC, financial accounting lives are governed by the Generally Accepted Accounting Principle (“GAAP”) of “conservatism” which “prefers the *understatement* . . . of net income and net assets where any

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<sup>7</sup> Although SWBT’s brief says nothing about the source of its depreciation lives and its primary pricing witness, Barbara Smith, concedes only that “*CLEC’s contend* that SWBT relied on projected lives” based on financial reporting lives, *see* Smith AR/MO Aff. ¶ 100 (emphasis added), and SWBT witness Naughton states that “SWBT and the Missouri Public Service Commission . . . properly used financial accounting lives as opposed to FCC prescribed lives.” *See* Naughton AR/MO Aff. ¶ 4.

<sup>8</sup> Report and Order in CC Docket No. 98-137; *Memorandum Opinion and Order in ASD 98-91, 1998 Biennial Regulatory Review – Review of Depreciation Requirements for Incumbent Local Exchange Carriers, United States Telephone Association’s Petition for Forbearance from Depreciation Regulation of price Cap Local Exchange Carriers*, ¶¶ 13-19 (released December 30, 1999) (“*Depreciation Order*”).

potential problems exist.”<sup>9</sup> Consequently, financial reporting depreciation lives are generally shorter than the actual forward-looking economic depreciation lives that must be used to comply with TELRIC standards.<sup>10</sup>

20. Furthermore, SWBT’s use of short depreciation lives is particularly inconsistent with its use of embedded fill factors and maintenance costs. For example, if SWBT’s loop assets depreciate faster on a forward-looking basis than they have in the past, then SWBT’s embedded fill factors are too low to account for the fact that its loops will need to be replaced sooner than in the past. Likewise, if SWBT’s assets depreciate faster on a forward-looking basis, SWBT’s embedded maintenance factors will be too high because they will assume that maintenance is required for a longer time period than those assets are assumed to last.

21. Regardless of how SWBT’s depreciation lives were derived, one fact is clear: for many critical inputs, those depreciation lives are far too low. I have compared SWBT’s capital depreciation lives for several critical inputs to those approved by state commissions for intra- and inter-state services, as well as to the full range of lives permitted by the Commission for regulatory use. *See* Table 1, below. This comparison shows that for many significant pieces of capital equipment (including cable), SWBT’s depreciation lives are as little as one quarter of those approved by the Commission. I also compared SWBT’s Missouri depreciation lives to those adopted in Texas, Kansas and Massachusetts. Once again, the depreciation lives used by

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<sup>9</sup> *See* Comments of GTE and Its Affiliated Domestic Telephone Operations Companies, *Prescription Simplification*, FCC 93-452, at 14 (March 10, 1993).

<sup>10</sup> For the same reasons, Missouri PSC Staff’s “benchmarking” analysis of SWBT’s proposed rates is of no use. Missouri PSC Staff tested the reasonableness of SWBT’s rates by comparing them to the projection lives computed by examining financial reports submitted to the Securities Exchange Commission by other companies. Because these reports use depreciation methods that are not TELRIC-compliant, that benchmarking analysis provides no useful information.

SWBT in Missouri are not even close to those approved in other states. Indeed, SWBT's depreciation lives are, in some cases, close to half those approved in these other § 271 approved states.<sup>11</sup>

**Table 1. Comparison of Depreciation Lives for Major Asset Categories Between SWBT Missouri and Other Comparable States**

Account	SWBT Missouri			FCC Permitted Range	Texas UNE	Kansas UNE	Mass. UNE
	UNE	Intrastate	Interstate				
ESS Digital	9.4	17.5	16.0	12.0-18.0	14.0	14.5	15.0
Circuit Digital	7.0	15.0	11.0	11.0-13.0	10.2	11.0	11.0
Aerial Metallic Cable	13.7	27.8	25.0	20.0-26.0	20.0	20.0	22.0
Underground Metallic Cable	15.0	30.0	25.0	25.0-30.0	25.0	25.0	25.0
Buried Metallic Cable	16.3	28.0	20.0	20.0-26.0	22.0	20.0	23.0

<sup>11</sup> SWBT claims that its depreciation lives also should be compared to the lower depreciation lives used by AT&T, and SWBT provides such a comparison. See Smith AR/MO Aff. ¶ 99. That comparison is meaningless. As SWBT is aware, the AT&T lives in its comparison were prescribed by the FCC for AT&T's *long distance plant* in 1995 (FCC 95-32, released January 31, 1995). Since AT&T had no local loops or local switches at that time, I have excluded those lives from my comparison. As the Commission explicitly recognized, "the underlying considerations that go into estimating the basic factors are sufficiently different for [LECs and IXC]s that they should be considered separately." Depreciation Simplification Order, *Notice of Proposed Rulemaking*, 8 FCC Rcd. 146, 148 (1992); see also *Depreciation Order* ¶ 18, n.2. The average projection life prescribed for the thirteen LECs in the January 1995 Order were as follows: ESS Digital, 17.0; Circuit Digital 12.0; Underground Metallic Cable 25.3; Buried Metallic Cable, 25.1. All of these lives are longer than those used to develop SWBT's Missouri UNE rates. See Smith AR/MO Aff. ¶ 99.

<b>Aerial Fiber Cable</b>	13.7	27.8	25.0	25.0-30.0	17.3	25.0	25.0
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22. In response to this evidence, SWBT argues that: (1) economic depreciation should properly reflect expected obsolescence, and not just physical deterioration, (2) the Commission-approved depreciation lives, which the MPSC rejected, do not, and (3) the SWBT proposals, upon which the Missouri depreciation lives were based, do. The latter two statements are false.

23. With respect to the second prong of SWBT’s argument, this Commission has recently explained that its depreciation lives – which most states have used in establishing UNE rates – *do fully and properly account for obsolescence* and are therefore appropriate for use in estimating the forward-looking costs of UNEs. *See Tenth Report and Order, Federal-State Joint Board on Universal Service*, CC Docket Nos. 96-45, 97-160, ¶ 426 (1999) (“*Inputs Order*”) (“Commission-authorized depreciation lives are not only estimates of the physical lives of assets, but also reflect the impact of technological obsolescence and forecasts of equipment replacement”); Memorandum Opinion and Order in ASD 98-91, *1998 Biennial Regulatory Review – Review of Depreciation Requirements for Incumbent Local Exchange Carriers, United States Telephone Association’s Petition for Forbearance from Depreciation Regulation of Price Cap Local Exchange Carriers*, ¶ 17 (released December 30, 1999) (“*Depreciation Order*”) ¶ 33 (“twenty-four states’ commissions have required incumbent LECs to use FCC-prescribed projection lives. . . . We are concerned that forbearance from depreciation regulation by the Commission might deprive state regulatory commissions of [the ability to rely on those factors]”); *see also Kansas/Oklahoma 271 Order* ¶ 76 (“it would be reasonable for a state to

follow the depreciation rates the Commission has set for regulation of SWBT's interstate services").

24. The third prong of SWBT's argument – that its depreciation rates reflect economic depreciation lives – is also unsupported by the record. As explained above, SWBT has provided no valid evidence to explain how its depreciation lives were developed or why they should be so much shorter than the depreciation lives used by other state commissions and those prescribed by this Commission.

25. The exact impact on UNE rates of SWBT's use of unusually short depreciation lives cannot be computed with any specificity without electronic access to SWBT's cost model. However, the impact of that error is likely to be substantial given the general significance of depreciation lives to cost estimates and the enormous deviation of SWBT's Missouri lives from any reasonable estimate of true economic lives.

**b. SWBT's Non-TELRIC Compliant Common Cost Factor  
Substantially Inflates All Of The Permanent Recurring Rates.**

26. SWBT's cost study includes an unreasonably high 16.47% additive to account for joint and common costs. Joint and common costs are those costs incurred in providing a group of elements or services that cannot be attributed directly to individual services or elements. Typically, these costs include general and administrative functions such as accounting, human resources, and costs relating to the development and maintenance of information technology.

27. The 16.47% common cost factor proposed by SWBT and approved by the MPSC is based entirely on SWBT's pre-1996 Act monopoly level of common costs<sup>12</sup> and is, therefore, not reflective of the forward-looking common costs that an efficient provider would incur. SWBT has since conceded that it has become more efficient. In its 1997 Annual Report (at 3, 15, and 19), for example, SWBT stated that it expected to achieve \$1.2 billion in annual expense savings and over \$300 million in annual capital savings as a result of its April 1, 1997 merger with Pacific Telesis. SWBT reported in its 1998 Annual Report (at 1) that it was ahead of schedule in producing the benefits of the merger. SWBT has also completed mergers with Southern New England Telephone and Ameritech and has reported that it expects to realize an addition \$3 billion in annual earnings attributable to expense savings from the Ameritech merger and its Project Pronto initiative. *See* SBC 1999 Annual Report at 3. In 2000, SBC reported that it “centralized several key functions that will support the wireline operations including network planning, strategic marketing and procurement” and that it “also consolidated a number of corporate support activities, including research and development, information technology, financial transaction processing and real estate management.” SBC 2000 Annual Report at 27. Notwithstanding these substantial cost reductions, SWBT's 16.47% common cost allocator does not account for these cost savings.

28. SWBT's excuse for excluding these cost savings is that “[m]erger savings would not only affect the numerator, but also the denominator [in the common cost factor].” Smith AR/MO Aff. ¶¶ 104-105. This excuse makes no sense, and also reflects bad math. SWBT has explained that its recent mergers will reduce its common costs, not other costs. *See e.g.*, SBC

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<sup>12</sup> *See, e.g.*, Smith AR/MO Aff. ¶ 102 (“Common Costs were identified using SWBT's most recent *historical costs* (1995 data at the time studies were produced)”) (emphasis added).

2000 Annual Report at 27 (stating that recent mergers will allow SWBT to “consolidate a number of corporate activities”). And SWBT’s common cost factor does not include common costs in the denominator; common costs are only reflected in the numerator. *See* Smith AR/MO Aff. ¶ 103 (“total expenses (*excluding common costs*) represent the denominator”) (emphasis added). Therefore, SWBT’s efficiency gains will work to lower the numerator while leaving the denominator unchanged, resulting in a lower common cost factor. But even if SWBT’s efficiency gains somehow reduce the numerator and denominator by the same absolute amount, SWBT’s common cost factor would still decline precipitously because the relative change in the numerator (which includes *only* common costs) would be much larger than the relative change in the denominator, thereby decreasing the common cost factor (for instance reducing the numerator and the denominator of the fraction  $3/4$  (or .75) equally by the number one produces  $(3-1)/(4-1)$  or  $2/3$  (or .67), a lower number).

29. In addition to using outdated data, there is a fundamental mismatch between the way SWBT’s 16.47% common cost allocator is developed and the costs to which it is being applied which also contributes to SWBT’s overstatement of common costs. SWBT calculates its common cost factor as the ratio of common expenses over total expenses (less common expenses). The factor, however, is applied to costs that also include a calculated return on the forward-looking investment. Because there is no equivalent to return on investment in the total expense amount (the denominator) used to develop the ratio, the ratio is overstated. SWBT should have, at least, developed its common cost allocator as the ratio of common costs to *revenues* less common costs. Revenues, unlike expenses, include an implicit return on investment and would thus produce a factor that is comparable to the costs to which it is being applied.

30. SWBT concedes that its inflated common cost factor is based on this fundamental mismatch. *See* Smith MO/AR Aff. ¶109 (“[b]ecause the equity portion of the cost of money is excluded in total expenses, there is a slight mismatch”). Nevertheless, SWBT takes issue with AT&T’s observation that using revenues (which include return on capital) as the base for calculating the ratio would have avoided the mismatch (although SWBT offers no alternative). *See* Smith AR/MO Aff. ¶ 109. According to SWBT, “[u]sing total revenues [as the denominator] would understate the [common cost] factor” because “total revenues also recovers the cost of money and income tax requirements associated with assets attributable to marketing and services, common operations, and network operations general supervision.” Smith AR/MO Aff. ¶ 43. This argument is a red herring. With revenues as the *starting point* instead of expenses, the common cost related items identified by SWBT – which were deducted from total expenses in SWBT’s own common cost study – would also be properly deducted from total revenues before computing the ratio.

31. A comparison of Missouri’s common cost factor to those in other states confirms that SWBT’s common cost factor is far too high. For example, the Kansas Commission recently adopted a factor of 10 percent, Verizon’s common cost factor in New Jersey and Pennsylvania is 10 percent, and in Georgia, BellSouth’s common cost factor is 5.4 percent. SWBT responds by claiming that there are other states that, according to SWBT, have implemented extremely high common cost factors. In particular, SWBT points to California, Oklahoma, Illinois, Ohio and Connecticut. *See* Smith AR/MO Aff. ¶ 106. The common cost factors in these states cannot justify SWBT’s bloated Missouri factor. I understand that the inflated common cost factor in California was computed using a methodology that plainly violates TELRIC – by assigning to Pacific’s network elements *all* of approximately \$1 billion in firmwide common costs that should

have been spread across all of Pacific's operations, including its retail operations – and is currently the subject of regulatory and district court challenges. There was no common cost factor approved in Oklahoma; rather, SWBT's Oklahoma rates were based upon an arbitrary compromise that was supported by no cost studies. SWBT's proposed common cost factors in both Illinois and Ohio were based on budget estimates that were not adjusted to reflect forward-looking cost adjustments. The joint and common cost factor that SWBT cites for Connecticut also includes costs that are not forward-looking, including adjustments to accruals for changes in accounting treatment of certain post-retirement benefits. Thus, if SWBT is correct that Ameritech, SNET and Pacific Bell states in which it has not even sought section 271 approval of its rates reflect still higher common cost ratios, that is a reason to question whether those states are cost-based, not a reason to assume that SWBT's Missouri rates are cost-based.

32. A reasonable, forward-looking common cost factor would be about 8%. *See* Exhibit 2 (attached). Thus, the impact of SWBT's overstated common cost factor causes all of SWBT's UNE rates to exceed their costs by about 8.5%.

### **3. Power, Engineering and Other "ACES" Model Errors.**

33. The Missouri PSC Staff has recognized that the ACES model, which increases all UNE rates with additional capital costs for sales taxes, telecommunications engineering and labor, miscellaneous materials, power equipment, and buildings to house equipment violates TELRIC principles by incorporating numerous embedded cost factors. The Missouri PSC Staff made several changes to the ACES model in an attempt to fix those problems, but left many problems unaddressed.

34. Key components of the ACES model such as power and telecommunications engineering and labor do not incorporate forward-looking costs. Both the power factor and telecommunications engineering factors within ACES are derived from SWBT's actual monopoly-environment experience in providing power for switches and engineering equipment replacements. SWBT's historical experience includes retrofitting and modifying the embedded facility to accommodate new equipment as well as in many cases providing for the removal and disposal of the obsolete equipment. None of these activities is required in the forward-looking TELRIC environment, where buildings are specifically sized and powered to meet the requirements of today's forward-looking digital switches.

35. Likewise, the ACES model continues to reflect embedded costs for outside plant facilities. For example, forward-looking maintenance expenses for metallic cable are based on SWBT's historical relationship of metallic cable maintenance expenses to embedded plant investment. No adjustments to historical expenditures are made to reflect the fact that the forward-looking facility is new. In this regard, the a forward-looking cost estimation model should, at a minimum, reflect a decrease in the amount of troubles produced by the existing deteriorating plant and a corresponding reduction in trouble repair and maintenance costs. Assuming a modest 25 percent reduction in repair and maintenance expenses for aerial and buried cable due to all new outside plant facilities would result in a 5% reduction in loop costs.

36. SWBT claims to have addressed some of these problems by transforming its embedded cost factors into forward-looking costs by multiplying those factors by a ratio of current costs to booked costs. *See Smith AR/MO Aff. ¶ 110.* But this process does not account for the fact that SWBT's power and telecommunications engineering factors include tasks such as retrofitting and modifying SWBT's embedded plant to accommodate new equipment, as well

as the removal of obsolete equipment – tasks that are not required in a forward-looking network. Merely reducing these values with a forward-looking ratio cannot correct this error – in a truly forward-looking study there would be *no* such costs.

37. Furthermore, SWBT’s maintenance factors are inflated by its use of embedded costs. SWBT’s factor development process results in the improper inclusion of the costs of SWBT’s own customer non-recurring activities (*e.g.*, new installations) in the TELRIC recurring rates. For this reason, the Texas commission and the advisory consultant in the Oklahoma proceeding required reductions in SWBT’s maintenance factors. And the Kansas Commission eliminated approximately 38% of SWBT’s “M-coded” maintenance costs (excluding switch RTU fees). No adjustment was made to the Missouri cost studies to address SWBT’s inflated maintenance factors.

**4. SWBT’s UNE Loop Rates Are Inflated By Numerous Additional TELRIC Violations.**

38. The cost models used to develop SWBT’s Missouri loop rates contain numerous additional TELRIC violations. Even the MPSC staff conceded that its adjustments to the SWBT cost studies did not even begin to address all of the fundamental flaws in those studies. *See, e.g.*, Staff Report at 19 (MPSC Staff made no adjustments to feeder/distribution cable (“FDI”) even after noting that “[i]t is important to remember that SWBT’s assumption of a single feeder cable terminating to an FDI will overstate the cable costs and overstate the cost of the loop”); *see also id.* at 25 (failing to address cable tapering assumptions even after recognizing that “this assumption fails to recognize the economies of scale associated with the tapering of large cables and will overstate the investment in feeder cable”); Staff report at 18 (failing to address the allocation of dark fiber costs to loop rates even after recognizing that “[t]his would raise some

concerns since the unused fiber is dark fiber and the investment associated with dark fiber can be recovered separately”).

39. *Substantially Understated Distribution Fill.* SWBT’s fill factors are far below TELRIC levels. SWBT’s proposed distribution fill factors ranged from about 30% to 37% and are “based upon the historical working pairs divided by the actual pairs in the loop today. . . . They are not adjusted to be forward-looking.” Staff Report at 23; *see also* Smith MO Aff. ¶ 44 (its factors rely on “*actual* fill factors for distribution cable based on *current levels of total capacity*”) (emphasis added). In other words, SWBT assumed that its distribution plant is often less than one-third full – or conversely two-thirds idle – and is expected to remain at that level indefinitely. This assumption is not forward-looking and reflects usage following many years of rate of return regulation. *See, e.g.*, Staff Report at 13 (“SWBT proposed using their actual fill factors in TELRIC studies. Staff believes the use of actual fill factors is not forward-looking”). MPSC Staff recognized, for example, that SWBT’s proposed fill factors fail to account for the increasing demand for second telephone lines which MPSC Staff believes “will have a significant impact on the fill factors used in the distribution portion of the network.” *Id.* at 14. The Commission’s TELRIC rules require that fill factors reflect “the proportion of a facility that *will be ‘filled.’*” *Local Competition Order* ¶ 682 (emphasis added); *see also Inputs Order* ¶ 195 (“The administrative fill factors are determined per engineering standards and density zone conditions. These factors are independent of an individual company’s experience and measured effective fill factors. The administrative fill factors would be the same for every efficient competitive firm”).

40. Beyond recognizing that SWBT’s proposed distribution fill factors were not TELRIC compatible, MPSC Staff provided no meaningful analysis to determine what the correct

fill factors ought to be. Instead, MPSC Staff simply required a slight increase to a 40% across-the-board fill factor. The MPSC Staff found that figure to be appropriate because 40% is higher than the highest fill factor proposed by SWBT. And the only reason cited by MPSC Staff for recommending a 40% fill factor is that it is conservative to the extent that it is near SWBT's plainly non-TELRIC rate of 36.61%. Staff Report at 14.

41. MPSC Staff provided no reason for rejecting AT&T's proposed fill factor of 50%; nor could it. AT&T's proposed fill factor of 50% is actually conservative compared with the distribution fill inputs by density zone of the Commission's Synthesis Costing Model. The Commission has recognized that an efficient provider would design its distribution network to be filled at 50-75 percent of capacity. *See Inputs Order* ¶ 188 n.392. Moreover, a 50% fill factor is right in line with that recommended by other state commissions with cost structures that are similar to Missouri. For instance, the Kansas Corporation Commission directed SBC to use a 53% fill factor explaining that 53% "represent[s] reasonable utilization rates on a long-term forward-looking basis." *KCC Inputs Order* at A-27. *See also Kansas/Oklahoma 271 Order* ¶ 80 (rejecting a 30% fill factor and noting that the Commission has adopted fill factors ranging from 50% to 75%). Likewise, the New York Public Service Commission adopted a 50% fill factor. *See, e.g., Tenth Report and Order, Federal-State Joint Board on Universal Service*, CC Docket Nos. 96-45 & 97-160, 14 FCC Rcd. 20156, 20369 (1999). And the mid-point of the distribution fill factors adopted by Massachusetts is 52.5%.

42. SWBT's expert witness has recognized that its distribution fill factor "seems low" but speculates that "some areas may experience unexpectedly large demand increases." Smith MO Reply Aff. ¶ 51. But that post hoc rationalization makes no sense. SWBT has provided no

evidence of such “unexpectedly large demand increases.” And if SWBT truly expected such demand increases, it would also have reflected that possibility by increasing its fill factors.

43. *Failure to Reflect Forward-looking Mix of Integrated Digital Loop Carrier.* SWBT’s treatment of digital loop carrier (DLC) systems significantly overstates SWBT’s loop rates. As recognized by SWBT witness Smith, “one of the key factors underlying DLC costs is whether the system is integrated with the servicing end office.” Smith MO Aff. at A-18. An integrated DLC (or “IDLC”) is more efficient and less costly because it is connected directly to the switching system so that digital signals from customers do not have to be converted back to analog signals. *See id.* (using integrated DLCs “saves from having to have central office terminating equipment for the DLC system”). By SWBT’s own admission, therefore, integrated DLC is the efficient forward-looking technology. However, SWBT’s cost studies, as adopted by the MPSC, do not employ this efficient integrated DLC exclusively on a forward-looking basis. Instead, SWBT’s cost studies assume that an arbitrary and undocumented ratio of integrated DLCs to non-integrated DLCs will be deployed on a going forward basis. *See Staff Report* at 24 (explaining that SWBT’s cost study assumes that 75% of DLCs are not integrated); Smith MO Aff. at A-10 (noting that non-integrated DLCs are used 75% of the time).

44. SWBT implies that the DLC ratio should have been set at *zero* because “[u]nbundled loops cannot be extracted or ‘groomed’ from an IDLC system without significant additional expense.” Smith AR/MO Aff. ¶ 61. That statement is wrong. It is well established

that loops can be extracted from modern IDLC systems at little or no additional cost.<sup>13</sup> In all events, no such “extraction” would be necessary to provide the UNE-P using an IDLC system.

45. *Improper Allocation of Dark Fiber Costs to Loop Rates.* SWBT’s UNE loop rates are inflated with dark fiber costs. The Missouri PSC Staff recognized that SWBT’s cost studies allow for the recovery of dark fiber costs in UNE *loop* rates, but did not fix that problem. *See* Staff Report at 18. SWBT appears to justify its inclusion of dark fiber costs in its loop on the grounds that it failed to include those costs in its dark fiber rates. *See* Smith AR/MO Aff. ¶ 93. But that argument makes no sense. Although that argument might provide SWBT with a justification for seeking higher dark fiber rates, it does not justify misallocating dark fiber costs to *loop* rates.

46. SWBT incorrectly states that its dark fiber costs belong in loop rates because CLECs might not purchase its dark fiber separately. *See* Smith AR/MO Aff. ¶ 94. That approach is not permitted by the Commission’s TELRIC rules. 47 C.F.R. 51.505(d)(4) (expressly disallowing recovery of costs to “subsidize . . . services . . . other than the element for which a rate is being established”); *see also* *Local Competition Order* ¶¶ 682 (allowing incumbent LECs to “recover the forward-looking costs directly attributable to the specified element. . . . Directly attributable forward-looking costs include the incremental cost of facilities and operations that are *dedicated to that element*”) (emphasis added). The Commission’s rules

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<sup>13</sup> *See, e.g., New York Re-Examination Decision* at 92 (“CLECs argue credibly that [integrated DLC] technology should be able to obviate UDLC [*i.e.*, non-integrated DLC] in the near future if it cannot already do so, and that a properly forward-looking TELRIC analysis should take into account those developments”). Some IDLC systems may accomplish loop extraction at the DS1 level, but no CLEC would incur the expense of collocation at an ILEC central office if it did not expect to serve at least 24 customers from major DLC systems.

on this issue are appropriate. Indeed, under SWBT's alternative approach, if CLECs were only buying loops, then switching and transport costs could go into loop rates as well.

47. *Failure to Allow for Tapering Feeder Cable.* SWBT states that its cost studies assume that each feeder segment terminates to only one feeder/distribution interface ("FDI"). See SWBT AR/MO at 38; see also Staff Report at 18. In other words, SWBT's cost studies determine the size of the feeder cable by the size of the FDI and then assume that the feeder segments have the same number of cable pairs because it connects directly to the FDI. However, the MPSC Staff correctly pointed out that, "[i]n reality, a feeder segment may originate as a very large cable and taper as the cable terminates to multiple FDIs." *Id.* Consequently, MPSC Staff concluded that this assumption "increase[s] the cost of the feeder segment because it precludes the use of large size cable at the beginning of the feeder segment and fails to recognize the tapering of the feeder cable." *Id.* Indeed, "SWBT's methodology would increase the number of smaller cables which have a higher cost per pair." *Id.* Even though MPSC Staff recognized that this problem "will overstate the cost of the loop," *id.* at 19, neither MPSC Staff nor the MPSC attempted to fix this problem that will obviously inflate the model's cost estimates.

48. SWBT's expert witness attempts to justify this TELRIC error by claiming that by basing cable costs on its existing cable inventory, rather than on efficiently designed forward-looking cable placement, it has compensated for this error by understating distribution cable costs while overstating feeder cable costs. See Smith AR/MO Aff. ¶ 73. As noted above, that explanation merely confirms that SWBT violated TELRIC by employing unlawful reproduction cost assumptions. In any event, SWBT has provided no evidence that the two claimed errors exactly cancel each other out or that its cable cost assumptions caused any understatement at all,

and because SWBT has not provided the Commission or other parties with full electronic access to those models, that assertion cannot be confirmed.

49. Furthermore, the record in this proceeding undermines SWBT's arguments that this problem no longer exists. When asked by the Missouri Staff to quantify and address the cable tapering problem, SWBT stated that it did not have any data related to the cable tapering and could not incorporate tapering into its loop cost study. *See Staff Report at 18.* But the few cost study files that I have seen do, in fact, have some of that data. And that data does not support SWBT's argument that its cost studies correctly account for cable tapering. The largest cable pair in SWBT's cable cost study documentation is *much smaller* than 4200 pairs. Therefore, SWBT's claim that its cost studies taper 4200 pair cable feeder down to 600 pair cable feeder at the FDI is unsupported by SWBT's own data. *See Smith AR/MO Aff. ¶ 73.* Moreover, SWBT's cost study documentation shows that a single sized cable is assigned to each FDI, which refutes SWBT's claims that its cost studies account for tapering of different sized cable pairs at the FDI.

50. *Structure Sharing.* SWBT's cost studies assume an unrealistically low percentage of conduit sharing. Specifically, SWBT assumes a scant 0.09% of its forward-looking conduit investment will be shared with other utilities. SWBT apparently bases this estimate on its historical conduit sharing experience in Missouri, a methodology which is clearly inconsistent with forward-looking principles and TELRIC. A proper forward-looking approach would, at a minimum, account for the fact that a new local telephone entrant in Missouri would seek out opportunities to share both existing and planned underground structure as a means of controlling forward-looking investments. The Commission's Synthesis Model recognizes this fact by assuming that underground structure sharing will occur in all but the most sparsely populated

areas. In particular, for areas where the lines density is 100 to 200 per square mile, the Synthesis Model assumes that 15 percent of underground structure investment (which, in Missouri, are generally conduits) is borne by others. In the highest density zones, the Synthesis Model assumes a 45 percent sharing rate for underground structure investment. Indeed, the average underground sharing rate assumed by the Synthesis Model for SWBT Missouri is nearly 40 percent. SWBT's .09 percent conduit sharing assumption is, therefore, completely out of line with that used by the Commission's Synthesis Model.

51. *SWBT's Non-Recurring Loop Conditioning Charges Violate TELRIC.* Portions of SWBT's embedded copper loop plant contain "line disturbers" (e.g., load coils, bridge taps, or repeaters). That equipment was used in the past to inexpensively improve the quality of voice-grade services over its copper loops that exceeded 18,000 feet in length. However, that equipment also "blocked" high-frequency signals (e.g., xDSL services) that are transmitted over copper loops. The process of removing load coils, bridge taps and repeaters from copper loops in order to allow high-frequency services to be provided over those loops is referred to as "line conditioning." SWBT's Missouri rates improperly include a nonrecurring line conditioning charge that exceeds **[Begin Proprietary]** **[End Proprietary]** for all lines that exceed 12,500 feet. And in recent proceedings, SWBT has proposed increased (by more than 50 percent) line conditioning NRCs.

52. Nonrecurring line conditioning charges are not compatible with basic TELRIC principles. The Commission's rules require that any "costs incumbents impose on competitors for line conditioning [must] compl[y] with [the Commission's] pricing rules for nonrecurring costs" – i.e., with TELRIC pricing rules. *See UNE Remand Order* ¶¶ 193-94; *see also id.* ¶ 194 n.369 (citing 47 C.F.R. §§ 51.501 *et seq.* & § 51.507(e); First Report and Order, *Implementation*

*of the Local Competition Provisions for the Telecommunications Act of 1996*, 11 FCC Rcd. 15499, ¶¶ 749-751 (1996) (“*Local Competition Order*”). As explained above, the relevant TELRIC costs are those of a “reconstructed local network [that] will employ the most efficient technology.” *Local Competition Order* ¶ 685. Therefore, an incumbent LEC may only recover from new entrants the line conditioning costs that it would incur if it had constructed its local network from the ground up using the most efficient design and technology, assuming only the locations of existing wire centers. Such a network would not contain *any* line disturbers, particularly for loops shorter than 18,000 feet. Therefore, line conditioning would be unnecessary.<sup>14</sup> Thus, under TELRIC and under the industry guidelines that have been in effect for the past 20 years, no separate charge is appropriate for conditioning loops shorter than 18,000 feet.

53. Even if some infrequent and minor types of line conditioning would occur in a forward-looking network, SWBT’s Missouri charges are clearly excessive, and appear to double-count those costs. For example, SWBT’s Missouri maintenance and common cost factors, which SWBT recovers through its nonrecurring loop rates, appear to be based on its *historical* accounting records to determine its *historical* expenditures for maintaining its loops and other network equipment as well as its *historical* common costs associated with that equipment. These historical records, however, already include the costs that SWBT incurred for line conditioning, *e.g.*, the installation, maintenance, repair *and removal* of load coils, bridge taps, and repeaters. Thus, the maintenance and common cost factors used by SWBT to develop its UNE rates for the

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<sup>14</sup> In fact, industry guidelines for local exchange networks have required, *for over two decades*, that all loops sold be unencumbered and capable of supporting digital services. See Michael Starkey and Mark Stacy, QSI Consulting, “‘Conditioning’ Outside Plant Facilities for Provisioning Advanced Services” (undated).

recovery of maintenance and common costs *already include* most, if not all, of SWBT's line conditioning costs.<sup>15</sup> Thus, allowing SWBT to recover line conditioning costs again through separate (non-recurring or recurring) charges constitutes blatant double recovery.

54. Recovering line conditioning charges through NRCs is also inappropriate. Large line conditioning NRCs, like those charged by SWBT, constitute a large barrier to entry to CLECs. Furthermore, the Commission's TELRIC rules support the notion that any unrecovered line conditioning costs must be recovered through recurring charges that amortize those costs over the life of the loops. The reason is simple. After a line is conditioned, it can forever be used by any carrier – both SWBT and its competitors – to bring consumers the benefits of advanced services competition. Like other costs associated with the onset of local competition, all carriers should bear a portion of line conditioning costs.

55. In addition, any recurring line conditioning charges should be spread over *all* loops in a particular serving area to ensure that these costs are recovered in a competitively neutral and nondiscriminatory fashion rather than arbitrarily depending upon where an incumbent LEC happens to assign unconditioned loops.<sup>16</sup> In this way, each carrier will be

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<sup>15</sup> Other LECs have already conceded this essential fact. Verizon describes that its “current outside plant guideline[.]” with respect to existing load coils is that “they are gradually phased out, for example, as existing loops are replaced or rebuilt.” Thus, Verizon and other incumbent LECs already remove load coils from their network as a matter of course, and presumably seek to recover this maintenance expense through their recurring UNE loop charges. US WEST (now Qwest) made a similar concession, recognizing that “the labor costs associated with unloading loops are currently included in the maintenance factor used to develop recurring costs.” Oregon Public Utility Commission Order No. 98-444 in Docket Nos. UT-138 and UT-139, entered November 13, 1998. An electronic copy of this decision is available at [http://www.puc.state.or.us/orders/1998ords/98-444.htm#\\_Toc435505293](http://www.puc.state.or.us/orders/1998ords/98-444.htm#_Toc435505293).

<sup>16</sup> Line-specific charges would create numerous economic inefficiencies. For instance, to the extent that a particular customer is served by more than one line pair, line-specific charges create incentives for incumbents to make only unconditioned line pairs available to new entrants.

assessed charges in a nondiscriminatory fashion that appropriately reflect its relative use of the network. See 47 U.S.C. §§ 251(c)(2), (3), (6), and 252(d)(1); 47 C.F.R. § 51.503(a) (“An incumbent LEC shall offer elements to requesting telecommunications carriers at rates, terms, and conditions that are just, reasonable, and nondiscriminatory”).

56. Lastly, SWBT’s NRCs for line conditioning appear to be vastly inflated by its use of methodologies that patently violate TELRIC. SWBT’s cost studies appear to assume that one technician visit is required to condition each line pair contained in a particular binder group.<sup>17</sup> That is, for a fifty pair binder group, these SWBT cost study assumes that a technician has to be dispatched 50 *separate times* to remove line disturbers from that *single* binder group. That assumption plainly violates TELRIC because a more efficient method of line conditioning would be to send a technician to the binder group only once, at which time the upgrades all line pairs in that binder group.

**5. SWBT’s Missouri Switching Rates Are Not Based on Forward-Looking Least Cost Switch Prices and, as a Result, Are Significantly Overstated.**

57. *Switch Discounts.* Forward-looking cost studies assume a “scorched-node” environment where the only elements of SWBT’s embedded Missouri network are the locations of existing wire centers. *Local Competition Order* ¶ 685. All assets necessary to service demand for telecommunications in the SWBT Missouri service territory would therefore have to be

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Moreover, line-specific charges result in different charges for serving customers living in the *same neighborhood* and, to the extent that those charges are passed on to end-users, result in *different rates for end-users in the same neighborhood*.

<sup>17</sup> Copper cable pairs within a sheath are engineered in “binder groups” because copper cable is manufactured in groups of pairs that are wrapped with a binding ribbon in either 50 or 25 pair groupings.

newly purchased. Thus, the applicable switch discounts should be those which are available for new switching equipment.

58. The cost model adopted by the MPSC, on the other hand, computes switch discounts based on “attributable growth” – the volume and type of switches that would be needed to expand SWBT’s *existing* network. *See* Staff Report at 32. This assumption violates core TELRIC principles by allowing incumbent LECs to recover costs based on their existing network architecture and operations. And the MPSC Staff correctly recognizes that “discounts for growth jobs are typically less than the discounts for new switches.” *Id.*

59. SWBT argues that basing switching costs on the costs of purchasing new switches at the best available discount would result in a “flash-cut” of switch investment “at a single point in time” and is therefore not an appropriate measure of switch discounts. *Smith AR/MO Aff.* ¶ 54. To the contrary, such a “flash cut” of switch investment is precisely what the Commission’s TELRIC methodology contemplates. As the Commission has stated, the rates for network elements should be “based on costs that assume that wire centers will be in place at the incumbent LEC’s current wire center locations, but . . . the *reconstructed* local network will employ the most efficient technology for reasonably foreseeable capacity requirements.” *Local Competition Order* ¶ 685.<sup>18</sup> And it is for precisely these reasons that the Commission specifically rejected incumbent LEC arguments that “costs associated with upgrading switches” should be included in its Synthesis Model and instead held that forward-looking switching costs

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<sup>18</sup> *See also Bell Atlantic-Delaware, Inc. v. McMahon*, 80 F. Supp. at 238 (agreeing that the “long-run” requirement of the TELRIC standard “says rip every switch out. All of them. . . . Every switch in the network, rip them out. Leave . . . wire center locations where they are. And build the network that you would build today to serve demand”).

should be determined using newly purchased switches efficiently sized to meet existing demand.

*Inputs Order* ¶ 315.<sup>19</sup>

60. The MPSC Staff compounded the error in SWBT's switch discount computations by applying those wrong (and insufficient) discounts only to materials, and not to engineering and installation, notwithstanding MPSC Staff's recognition that "other firms receive discounts on these [latter] items." Staff Report at 32. Although materials comprise the majority of new switching equipment investment, engineering and installation costs are substantial. Failure to provide for standard discounts on these items significantly contributes to excessive TELRIC switching costs.

61. SWBT's explanation for its failure to apply switch discounts to engineering and installation – that the particular SWBT contracts that it elected to provide to the Missouri PSC do not provide discounts for engineering and installation – is not consistent with the TELRIC rules. The question is not whether those particular SWBT contracts include such discounts but whether an efficient provider reconstructing a network today could and would demand them. The Texas switch usage cost studies recently produced by SWBT show that the Texas Staff ordered the switch discounts to be applied to materials, installation and engineering.<sup>20</sup> See Arbitration Award, Public Utilities Commission of Texas, Docket Nos. 16189, 16196, 16226, 16285, 16290, 16455, 17065, 17579, 17587, 17781, at Appendix A, page 1, Issues 2-7 (December 17, 1997).

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<sup>19</sup> In particular, the Commission has found that "[s]witches, augmented by upgrades, may provide carriers the ability to provide supported services, but do so at greater costs. Therefore, such augmented switches *do not constitute cost-effective forward-looking technology.*" *Inputs Order* ¶ 317 (emphasis added).

<sup>20</sup> Further, SWBT's attempt to justify its Missouri switching rates by comparing them to those proposed by AT&T in Texas confirms that SWBT's Missouri UNE switch rates are excessive.

62. SWBT has not provided any details relating to either the new switch equipment discount for which it is eligible or the growth equipment discounts. Based on my experience, growth equipment discounts range from between 30% to 60% of those available for new equipment. Depending on the level of the available new switch discount, use of a growth only discount could overstate switching costs by more than 50%.

63. *Hardware Factor.* SWBT's Missouri switch usage costs also include investment additives for additional switch hardware that SWBT claims is necessary to provide certain features. The MPSC Staff was critical of these additional switch investments, explaining that the investment additives are substantial and, more importantly, that there is the possibility that the additional hardware investment is already included in the investments produced by the Switch Cost Information System/Model Office ("SCIS/MO") and are being recovered elsewhere in the SWBT cost studies. Staff Report at 43. Staff was also concerned that, because the hardware additive percentages may be based on old technology and not less expensive forward-looking switch technology, the costs may be further overstated. Staff, however, made no recommendations to correct these overstatements.

64. SWBT has denied that it double counted port costs through its hardware factor. *See Smith AR/MO Aff.* ¶¶ 60-64. However, SWBT provides no data or other information to support that assertion. Consequently, there is no way to determine whether SWBT's assertions

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*See Smith AR/MO Aff.* ¶ 53. The UNE switch rates relied on by SWBT in this proceeding are about 50 percent higher than those proposed by AT&T in Texas. *See id.*

are true. Given that SWBT admitted in Kansas rate proceedings that it *did* double recover such costs, SWBT’s unsupported assertion that it did not do so in Missouri is suspect.<sup>21</sup>

**C. SWBT’s Limited Rate Reductions Are Patently Insufficient To Offset The Rate Inflation Caused By The Many TELRIC Violations In SWBT’s Cost Studies.**

65. SWBT recently discounted a handful of its approved UNE rates by arbitrary percentage amounts. Specifically, SWBT made the following limited rate reductions:<sup>22</sup>

Recurring Loop Rates.	Average reduction of 10 percent, with slightly greater reduction for two wire analog loops in rural zone and <i>no reduction</i> for two wire analog and digital loops in the urban zone.
Recurring Local Switching and Tandem Switching Rates.	A reduction of 18.5 percent.
Recurring blended transport, common transport, and <i>certain</i> dedicated transport rates.	An average reduction 18.5 percent.
SS7 transport and STP port-per-port.	A reduction of 18.5 percent.
Non-Recurring charge for analog ports.	A reduction of 95.7 percent.

66. These arbitrary discounts are insufficient, on their face, to address the rate inflation caused by all of the TELRIC violations SWBT’s cost studies. As I explained above, many of those TELRIC violations – *e.g.*, the common cost and depreciation violations – inflated *all* of SWBT’s UNE rates, not just the few that SWBT has chosen to reduce. But SWBT’s recent discounts leave its rates for many important UNEs intact, including two-wire analog and digital loops in urban zones and certain dedicated transport rates. Thus, SWBT’s token targeted rate

<sup>21</sup> See Order Setting Inputs for Cost Studies, *Joint Application of Sprint et al. to Open a Generic Proceeding on SWBT’s Rates for Interconnection, Unbundled Elements, Transport, and Termination, and Resale*, Docket No. 97-SCCC-149-GIT, at A-71 (pointing out that SWBT concedes that it double recovers for universal tone receivers, once through the hardware factor and once through the SCIS model).