

# Broadband UNEs: Was There Ever A Fair Regulatory Solution, Anyway?

Michael Weingarten and Bart Stuck

**It looks like ILECs won't have to wholesale their broadband infrastructure. The decision comes a little late.**

In our recent article, "Is FTTH Affordable?" (*BCR* June 2004, pp. 24–28), we examined the free-market economics of fiber-to-the-home (FTTH) deployment for ILECs and CLECs (incumbent and competitive local exchange carriers). Our conclusion was that FTTH deployment was marginally attractive at best—and at that, only for ILECs.

If ILECs cannot afford to build fiber-based broadband networks, regulatory policy issues for FTTH are moot. The importance of the issue also is diminished by the news that the Bush Administration and the FCC are not going to appeal the DC Appeals Court decision throwing out broadband UNE requirements.

However, as an epitaph for the idea of UNEs, and in recognition that the issue is far from dead in other countries, we thought we would ask the question, "Is there a fair regulatory solution for FTTH that adequately compensates ILECs and allows market participation by CLECs?"

To answer this question, we took another look at the Corning-Cambridge Strategic Management Group (CSMG) FTTH economic model that influenced the FCC's Triennial Order removing ILEC broadband UNE requirements (a model that we discussed in some detail in our previous article). One of CSMG's key conclusions was that ILECs could not justify FTTH deployment if saddled with UNE requirements. Since we had reverse-engineered the model for our previous article, we decided to use it to analyze the regulatory case economics. Here is what we found:

**■ Issue 1: Do ILECs Generate Negative Net Present Values If Forced To Sell UNEs At \$20 Per Line?**

One of the key assumptions driving CSMG's negative conclusion on UNEs is that ILECs would be

forced to provide network access at \$20 per month. So our first question was whether ILECs could generate positive return on investment at this price.

CSMG says no. For a sample central office (CO) in Amarillo, TX, its regulated case generates an NPV of -\$7.4 million, compared to +\$7 million for the free market case.

As we reviewed CSMG's detailed supporting assumptions (i.e., that in the regulatory case, CLECs would take away roughly 30 percent of ILEC subscribers), we decided to make a number of changes that improve the regulatory case economics (i.e., that not all of the CLEC subscribers come at the expense of ILECs).

Even with these changes, the

Michael Weingarten (*mikew@signallake.com*) and Bart Stuck (*barts@signallake.com*) are Managing Directors of Signal Lake, an early-stage telecom venture capital fund (Boston MA and Westport CT).

**TABLE 1 Free Market Versus Regulated Case For Amarillo TX**

	Total NPV \$Million	NPV Years 1-11 \$Million	NPV Terminal Value Year 12 \$Million
Including Feeder Fiber Costs			
Free Market case (based on reverse-engineered model)	\$6.7	(\$9.6)	\$16.3
Regulated Case @ \$20 UNE TELRIC rate (based on reverse-engineered model)	(\$2.6)	(\$13.5)	\$10.9
No Incremental Feeder Fiber Costs			
Free Market case (based on reverse-engineered model)	\$13.2	(\$3.1)	\$16.3
Regulated Case @ \$20 UNE TELRIC rate (based on reverse-engineered model)	\$3.9	(\$7.0)	\$10.9

Source: Signal Lake analysis.  
Assumed 10-year depreciation and 40% tax rate on pretax income.

**TABLE 2 UNE TELRIC Calculations For Amarillo TX \$ Per Subscriber Per Month**

	10-Year Capital Return Amortization	15-Year Capital Return Amortization	20-Year Capital Return Amortization
Capital Return	\$35.73	\$30.27	\$28.03
15% Return on Capital	\$4.64	\$3.94	\$3.64
Depreciation tax credit	(\$7.43)	(\$7.43)	(\$7.43)
Net Capital Charges	\$32.95	\$26.78	\$24.25
Opex (based on CSMG GM%)	\$17.10	\$17.10	\$17.10
Additional Network Maintenance (Levelized; 4% of cumulative non-fiber plant)	\$1.47	\$1.47	\$1.47
Installation	\$5.51	\$5.51	\$5.51
Levelized incremental G&A \$ (1% of revenues)	\$0.58	\$0.58	\$0.58
TELRIC Rate	\$57.61	\$51.45	\$48.92

Source: Signal Lake analysis based on CSMG model. Assumed 10-year depreciation for tax purposes and 40% tax rate on pretax income; 13% cost of capital.

The appropriate TELRIC rate is around \$50, not \$20

results (Table 1) indicate that ILECs cannot make money if they are forced to wholesale broadband UNE-P for \$20 per line while building feeder fiber from scratch. ILECs run at slightly better than breakeven if they don't have to build feeder fiber (but even here, the positive NPV comes entirely from terminal value). In each instance, the regulation case has substantially lower NPV than the free market case, reducing ILEC incentive to invest.

**Issue 2: What Is A “Fair” TELRIC-Based Rate For FTTH?**

Given the critical importance of the \$20 UNE rate to the overall conclusion, how appropriate is the \$20 rate? If it is true (as AT&T maintains) that a properly-applied TELRIC process would generate a return on investment at the cost of capital, what “fair” TELRIC rate accomplishes this? (TELRIC or Total Element Long-Run Incremental Cost is the model used to determine wholesale rates for UNEs.)

The right way to determine TELRIC rates is with a cost proxy model. Unfortunately, cost proxy models are highly detailed, extremely geo-specific and take years to develop, and we're not going down that road. (Note: we reviewed the FCC's narrowband cost proxy model in detail for a previous BCR article, July, 2003, pp. 54–58.) As a workable approximation, we undertook to gen-

erate a reasonable TELRIC cost for FTTH, using the following methodology:

- Calculate a levelized return of capex (assuming a 13 percent return on capital) based on 10-, 15- and 20-year book amortization periods.
- From this, subtract the tax benefit from depreciation. This is consistent with the ratio of RBOC net plant to annual capex in 2002 (9.85 times).
- Add operating costs plus incremental general and administrative (G&A) expense.

The results (Table 2) indicate that the appropriate TELRIC rate on the CSMG FTTH plant should be \$49–\$58 per sub per month, or around 2.5–3 times the assumed CSMG rate.

**Issue 3: Do ILECs Still Generate Negative NPVs If They Sell UNEs At This Higher TELRIC Rate?**

When we input higher TELRICs into the model, to what extent does the disadvantage of the regulated case disappear?

In theory, if our free-market NPV is close to breakeven, and if we utilize a TELRIC rate that incorporates full capital recovery, the regulated case should return approximately the same NPV as the free market case—all else being equal.

However, in this instance, where the free market case generates a \$6.7 million NPV return on a \$33 million investment (for a 20 percent return), a regulatory unbundling requirement should reduce NPV, because the ILEC loses retail customers. But NPV should not fall below zero, because the ILEC gains wholesale customers, who pay a rate designed (via TELRIC) to generate a 13 percent return.

To test this, we ran our model using a \$57.61 TEL-

**TABLE 3 Regulated Versus Free Market Cases For Amarillo TX @ 13% Cost of Capital Including Feeder Fiber Capex**

	Total NPV \$Million	NPV Years 1-11 \$Million	NPV Terminal Value Year 12 \$Million
Free Market case	\$6.7	(\$9.6)	\$16.3
Regulated case	\$5.3	(\$10.3)	\$15.6

Source: Signal Lake analyses.

**Rates that are fair to the ILECs are too high for the CLECs**

**TABLE 4 CLEC UNE Cases For Amarillo TX @ 15% Cost Of Capital**

	<b>Total NPV \$Million</b>	<b>NPV Years 1-11 \$Million</b>	<b>NPV Terminal Value Year 12 \$Million</b>
Regulated case @ \$50 UNE-P	(\$4.4)	(\$2.1)	(\$2.3)
Regulated case @ \$26.28 UNE-P	\$0	(\$0.2)	\$0.2

Source: Signal Lake analyses

RIC rate. The results (Table 3) indicate that at equivalent discount rates, the NPV for the regulated case is indeed slightly lower (by 20 percent) compared to the free market case, but still above the cost of capital.

**■ Issue 4: Can CLECs Make Money at Higher TELRIC Prices?**

We ran the model (adjusted for CLEC inputs), assuming \$50 UNE-P rates. Our conclusion is that at \$50 UNE-P, CLECs don't make money. The reason (which we discuss in our previous article) is that CLECs have been operating at high SG&A expenses, which more than offset reseller gross margins at \$50 UNEs.

How low would UNEs have to fall for CLECs to generate zero NPV? No greater than \$26.28—a level well below a fair TELRIC rate.

**Conclusions**

We come away from this set of calculations think-

ing that there is no regulatory solution that adequately compensates ILECs and also simultaneously provides adequate incentive to the CLECs:

■ At \$20 for broadband UNE-P, ILECs cannot make money on an FTTH plant, and they have every right to complain that they are suffering an unconstitutional taking of property without just and fair compensation.

■ If TELRICs are set at a level allowing full capital recovery, ILECs can generate reasonable NPVs compared to the free market case.

■ Unfortunately, at these higher TELRICs, CLECs can't generate a profit.

Given these findings, and politicians' statements that maintained the contrary, the eight years of wrangling over UNE and TELRIC rules was built on faulty economic premises that two players could generate two profits from one plant. The whole effort was doomed from the start□