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FEDERAL COMMUNICATIONS COMMISSION
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February 5,2003

EX PARTE

Ms. Marlene Dortch
Secretary
Federal Communications Commission
The Portals
445 12th Street, S.W.
Washington, DC 20554

Ke: CC Docket Nos. 01-338, 96-98, and 98-147

Dear Ms. Dortch:

In the preceding months of the Triennial Review, Z-Tel Communications, Inc. ("Z-Tel") has provided scores of pages of detailed economic evidence and econometric analyses on unbundling. In the course of these filings, Z-Tel has cited several additional academic papers that review the impact of unbundling on network facility deployment and on profitability of incumbent LECs. To provide the Commission with a full record on these points, attached are copies of some additional papers that Z-Tel has cited. The reader will notice, without a doubt, that the wealth of academic, economic evidence in this proceeding supports continued availability of unbundled local switching and UNE-P.

Sincerely,

Christopher J. Wright
***Counsel** Z-Tel Communications, Inc.*

PHOENIX CENTER FOR ADVANCED LEGAL & ECONOMIC PUBLIC POLICY STUDIES

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PHOENIX CENTER POLICY PAPER SERIES

Phoenix Center Policy Paper Number 17:

Bell Companies as Profitable Wholesale Firms: The Financial Implications of UNE-P

T. Randolph Beard and Christopher C. Klein

(November 2002)

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Phoenix Center Policy Paper No. 17
Bell Companies as Profitable Wholesale Firms: The Financial Implications of UNE-P

T. Randolph Beard, PhD*
Christopher C. Klein, PhD†

Abstract: Recent reports by financial analysts on the financial consequences of UNE-P sales for Bell Operating Companies have drawn additional attention to long-standing complaints by the BOCs that such sales are confiscatory and amount to "subsidized competition." This Policy Paper subjects the conclusions of these financial studies to careful scrutiny, and finds that they are largely without merit. Errors in both the calculation of unbundled element revenues, and in the wholesale costs of providing unbundled elements, are identified. Using actual payments by a representative CLEC and publicly available ARMIS expense data, we obtain realistic revenue and current cost figures usable for EBITDA-type financial analyses. Our analysis suggests that positive EBITDA margins are the rule. Even the inclusion of depreciation and amortization does not materially alter this conclusion, as EBIT margins are also found to be positive for each BOC. In addition, because these analysts' reports are intended exclusively to provide investment advice, they are not useful for evaluating the social impacts of required element sales and, therefore, should not provide the basis for public policy decision-making.

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* **Adjunct Fellow, Phoenix** Center *for* **Advanced Legal and Economic Public Policy Studies;** Professor of **Erononiics, Auburu University** **The authors** are **especially indebted** to **George Ford for** his **assislance with** the **data** and analyses. **We** also thank **Larry** Spiwak **for helpful** comments, **and lor preparing** the manuscript **for publication.** An)' remaining **errors** are **the responsibility** of the authors.

† Professor of Economics, Economics and Finance **Department, Middle** Tennessee **State** University, Murfreesboro, **Tennessee,** and **former** Chief Economist for the Tennessee Regulatory **Authority**

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Summary of Findings

The primary purpose of this Policy Paper is to evaluate claims by the BOCs and several financial analysts that wholesale prices for the combination of unbundled elements called UNE-P are not adequate to cover operational expenses. The analysts' reports, with which the BOCs support their claims, include estimates of the revenues from UNE-P sales and estimates of wholesale operating costs, the latter being an arbitrarily selected percentage of retail operating costs. With respect to UNE-P revenues for the BOCs, we compare the analysts' estimates with the actual payments of a CLEC providing service in 46 states. This comparison indicates that the analysts, in most cases, have grossly understated UNE-P revenues.

With respect to wholesale costs, the analysts consistently measured cost in an arbitrary manner. In contrast, we employ BOC-specific cost information provided to the FCC to construct retail and wholesale operating costs. The detailed cost data we use allows for more precise estimates of avoided costs, since costs that are clearly related to retail functions, or unrelated to the provision of switched access services, can be eliminated. Instead, the financial analysts use

arbitrary reductions in arbitrarily specified retail costs to compute wholesale expenses. While the analysts' estimates of retail costs are generally consistent with our estimates, we find that the wholesale cost estimates of the analysts are substantially overstated, and appear inconsistent with the recent claims of a BOC financial officer about wholesale costs and wholesale profitability.

We show in this paper that understating revenues and overstating costs drives the analysts' conclusions regarding the "profitability" of UNE-P. We find that the EBITDA margins computed by the analysts are biased downward by including too little revenue and too much cost.

Summary of **Findings**

	UNE-P Revenues	**Wholesale** Costs	EBITDA Margin	EBIT/Operating Margin
Verizon	**24.43**	10.42	14.00	**9.42**
BellSouth	**12**80	9.46	23.33	18 **75**
SBC	20 **57**	9.91	10 67	6 08
Qwrst	24 63	Y **91**	**14 70**	10 12
BOC Wide	24 43	YYY	1443	**9.85**

The results of our analyses are summarized in the table above. Our estimates of wholesale operating costs are about $10 per line across the BOCs. EBITDA (earnings before interest, taxes, depreciation and amortization) margins are positive and average over $14 per line per month. Operating margins (or EBIT, earning before interests and taxes) are also positive, and average 40% of revenues.

While in conflict with the conclusions of the financial analysts, our findings are supported by the recent statements of SBC's Chief Financial Officer, Randall Stephenson, who reported to the investment community that UNE-P per-line revenues of $20 to $21 were sufficient to allow SBC to "earn money" and did not give the company a "disincent[ive] to invest." Our results indicate **that,** on average, UNE-P prices of about $20 are fully remunerative to the BOC in the sense of providing a positive operating margin.

I. Introduction

The primary purpose ***of*** the Telecommunications Act of 1996 ("1996 Act") was to promote competition in the local exchange telecommunications

marketplace – the last vestige of the telecommunications monopoly. Congress aimed to alter the competitive landscape of local telecommunications by splitting the integrated local phone market into its wholesale and retail components.[1] In the post-1996 Act environment, firms seeking to offer retail local telephone services need not construct a local exchange network, but may offer services by acquiring the necessary facilities in a "wholesale market" where such facilities are bought and sold.

When the 1996 Act was signed into law in February 1996, however, there was only one firm capable of supplying the wholesale market (in each local market) – the incumbent local exchange carriers or "ILECs." **A** similar situation persists today. Consequently, the wholesale prices of these wholesale monopolists were to be regulated and based on "cost."? "Cost" was defined by the Federal Communications Commissions ("FCC") as total element long run incremental cost ("TELRIC"), which **was** described in the FCC's *First Report and Order* in August of 1996.3

While the FCC defined tlie cost standard, it was the State regulatory commissions that were assigned the task of implementing the standard.[4] Wholesale prices for unbundled network elements ("UNEs") – that is, the network facilities retail providers "buy" from the ILEC – have been and continue

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[1] *See Verizon Communications Inc. v. FCC*, 122 S. Ct. 1646, 1662 (2002) ("Congress aim[ed] to ... reorganize markets." "[W]holesale markets **for** companies engaged in resale, leasing, or interconnection of facilities cannot be created without addressing rates. * * * The Act...favor[ed] ..novel rate setting designed to **give** aspiring competitors every possible incentive Io enter local retail telephone **markets").** For a **full** discussion of the *Verizon* Opinion and the current FCC broadband initiatives, *see* Lawrence J. Spiwak, *The Telecoms Twilight Zone: Navigating the Legal Morass Among the Supreme Court,* Hie *D.C. Circuit and the* Federal *Communications Commission*, PHOENIX CENTER POLICY PAPER SERIES NO. **13** (August 2002) (http://www.phoenix-center.org/pcpp/PCPP13Final.pdf); COMMUNICATIONS WEEK INTERNATIONAL, Opinion: *U.S. Competition Policy – The Four Horsemen of tlie Broadband Apocalypse* (01 April 2002) (available at http://www phoenix-center.org/commentaries/CWIHorsemen.pdf)..

[2] Section 252(d)(1) of the 1996 Telecommunications Act states, "rates for the interconnection of facilities **and** equipment . . **shall** be ... bdsed on the **cost** of providing the interconnection or network element....").

[3] *In re Implementation of the Local Competition Provisions in the Telecommunications* Art *of 1996,* First Report & Order, **1**1 FCC Rcd 15499 (1996) (*Section* 257 *Order*).

[4] ***Id.*** at ¶28 ("The *1996 Act* requires the States to set prices for interconnection **and** unbundled elements that are cost-based. nondiscriminatory, and may include a reasonable profit,")

to be determined in evidentiary hearings before each state's respective regulatory commission.[5]

The 1996 Act has led to increased competition in many local telecommunications markets, though generally not to the extent many had hoped.[6] Today, the combination of unbundled elements called "UNE-P" or "UNE-Platform" is the most successful mode of competitive entry created by the 1996 Act, and its growth substantially exceeds the alternative modes of entry. This success has brought UNE-I' under attack by the Bell Operating Companies ("BOCs"), and their assault on the successful entry mode is multifaceted.7

First, the BOCs argue that UNE-P deters CLEC investment and deployment of switching equipment. This claim, however, **does** not survive econometric scrutiny.[8]

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[5] Letter from Commissioners Joan Smith and Robert Nelson (Chair and Co-Chair of the National Association of Regulatory Utility Commissioners, Telecomniunications Committee) to the Honorable Thomas Daschle (September 27,2002).

[6] Yochi J. Dreazen, *FCC, Faced with Telecom Crisis, Could Let a Bell Buy Worldcom*, WALL STREET JOURNAL (July 15, 2002) at A-1

[7] *See, e.g.*, TR DAILY (9/6, 9/10, 9/11, 9/13, 9/17, 9/18, 9.24, 9/25. 9/26. 9/27); Glenn Bisclioff, *USTA Calls For the End of UNE-P, TELRIC*, TELEPHONYONLINE.COM **(Seyt. 13** 2002). *See also* SBC Press Release (September 17, 2002) where, according to SBC President Richard Daley, TELRIC pricing is "below cost" and is an "irrational and unsustainable subsidy that is threatening the future of our telecommunications infrastructure." *Washington Telecom Newswire* (September 9, 2002) (According to Verizon CEO Ivan Seideiiberg: "State commissions don't get it. They don't have a clue because they **are trapped"** in an old view of regulatory **policy.")** Such criticisms are particularly puzzling given that the Bells' publicly reported to the FCC that States imposed TELRIC pricing as a pre-condition of receiving authority under Section 271 of the Telecommunications Act to provide in-region inter-LATA service. *See, e.g., Ex Parte* Presenation, Messrs. I. Seidenberg, W. Barr, and T. Tauke and Ms. D. Toben, representing Verizon, met separately with Chairman Powell and Mr. C. Libertelli, Commissioner Abernathy and Mr. M. Brill, Commissioner Copps and Mr. J. Coldstein, and Commissioner Martin and Mr. D. Gonzales **(Ms.** Toben did not attend this meeting), WC Docket No. 01-202, Verizon Petition for Emergency Declaratoty and Other Relief; CC Docket No. 01-338 Review of the Section 251 Unbundling Obligations of Incumbent **Local** Exchange Carriers: CC Docket No. 96-98, Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, and CC Docket No. **98147,** Deployment of Wireline Services Offering Advanced Telecommunications Capability, August 16, 2002, at 16. *See also* CCMs (2002) and UBSWarburg (2002).

[8] *See* T.R. Beard, G. S. Ford, and T.M. **Koutsky,** *Facilities-based* Entry **in** *Local Telecommunications: An Empirical Investigation*, Unpublished Manuscript (2002); Z-Tel Policy Paper No 4 2002.

Second, and more recently, the BOCs have begun to criticize the State regulatory commissions by accusing the commissions of incorrectly applying TELRIC in their determinations of wholesale prices.[9] One claim is that the State commissions disregard "true" costs when they set wholesale prices, and instead choose wholesale prices that ensure sizeable margins for CLEC entrants.[10] Again, empirical evidence does not support the BOCs' claim in this regard.[11]

An alternate but related claim is that wholesale prices for UNE-I' do not cover the BOCs' actual operational costs for supplying a switched access line.[12] Financial analysts have provided some support for these claims, but the accuracy of the calculations made by these analysts on both the revenue and cost-side of the issue has been questioned,[13] and we provide further critiques on the analysts' estimates in this Policy Paper.

Financial analysts - including Capital Commerce Markets ("CCM"), Merrill Lynch ("ML), UBS Warburg ("UBS"), among others - have fueled the BOCs'

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[9] TR DAILY (Sept 27 2002) (reporting that Qwest wrote a letter to FCC Chairman Michael Powell claiming that "wide gulf separates TELRIC as it was originally conceived from TELRIC as it is now being applied in many States."); TR DAILY Sept. 11, 2002 (SBC says some of the key inputs being used in State cost proceedings are "at odds with market realities and inconsistent with the core assumptions inherent in TELRIC itself."); Bell South *Ex Parte* (Aug 28, 2002) CC Docket No. 01-338 ("Some State PSCs have abandoned any semblance of cost (including TELRIC) in setting wholesale rates").

[10] *See, e.g.*, SBC Press Release (September 17,2002), *supra* n. 7; *see also* TR DAILY Sept. 11 2002, further quoting Mr. Daley as stating that in some cases, State regulatory commissions "make no attempt even tu determine the correct input" lor the TELRIC model, Mr. Daley charged. "Instead, they choose inputs that will achieve a predetermined end-result: a TELRIC rate that will give AT&T the 45% margin it demands before it will enter local markets" using the unbundled network element platform (UNE-P).; *accord*, Bell South *Ex Parte* Aug. 28, 2002 ("Some State PSCs have abandoned any semblance of cost (including TELRIC) in setting wholesale rates, and instead are increasing resale discounts to levels that AT&T and other CLECs claim they need to operate profitably in residential markets) "

[11] T. Randolph Beard and George S Ford, *What Determines Wholesale Prices for Network Elements in Telephony? An Econometric Evaluation*, PHOENIX CENTER POLICY PAPER NO. 16 (September 2002) (http://www.phoenix-center.org/pcpp/PCPP16.pdf).

[12] *See, e.g.*, SBC Press Release (September 17, 2002), *supra* n. 7; *see also* Verizon *Ex Parte* (Aug. 16, 2002), CC Docket No. 01-338.

[13] PHOENIX CENTER POLICY PAPER NO. 16, *supra* n. 11, *Ex Parte* Letter to FCC Chairman Michael Powell from Robert Curtis and Thomas Koutsky, Z-Trl Communications, Inc., Docket No. 01-338 (Sept. 23, 2002); Letter to FCC Chairman Michael Powell from Donna Sorgi, Worldcom Inc., in Docket No. 01-338 (September 16,2002)

claims against UNH-P, suggesting that revenues from UNE-P are insufficient to cover operating costs.[14] We consider the analyses and findings of these analysts' reports in this Policy Paper. Specifically, we provide revenue and cost estimates for the BOCs' switched access lines at both the retail and wholesale level. Our approach is more direct than that of the financial analysts who have typically used somewhat arbitrary means by which to infer costs. Since public data allows for the direct calculation of operating costs, arbitrary assumptions are not required. Further, the cost detail provided in the data allow for better estimates of avoided costs, since it is clear that certain expenses are avoided (*e.g.*, billing, marketing, and customer service) while others are passed along to the CLEC serving the customer (*e.g.*, access charges). Various assumptions regarding other allow **us** to compute a range of expected wholesale costs discussed in this paper.

The relationship between UNE-P revenues and wholesale costs requires estimates of revenues. We rely on four sources for these values. CCM, ML and UBS all provide state-level estimates of UNE-P revenues. UNE-P revenues, however, are not easily computed, at least not correctly. To evaluate the reasonableness of these publicly available estimates, we compare these estimates to the actual, per-line payments of a CLEC using UNE-P to provide service in **46** states (Z-Tel Communications).

The balance of this Policy Paper is outlined as follows. In Section II, we briefly discuss the relationship between TELRIC and current operating cost. Generally, TBLRIC does not address the revenues needed to cover current or embedded operational costs or depreciation. TELRIC derived prices may or may not cover such costs. Thus, the BOCs' claims regarding wholesale prices and EBITDA margins have no meaningful connection to the correct application of TELRIC. Next, in Section III, we present estimates for the BOCs' per-line revenues for UNE-P. We then describe our computation of wholesale costs, providing a range **of** plausible estimates in Section VI. Computed EBITDA margins are presented in Section IV. We ignore the implications of long-distance margins on the BOCs' financials. Our approach focuses solely on the BOC as a wholesale provider of local telecommunications plant. The broader policy issues related to competition across telecommunications markets are left for others to

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[14] *Status & Implications of UNE-Platform in Regional Bell Markets*, Capital Commerce **Markets,** (November 1, 2001 and August 22, 2002); *How Much Pain From UNE-P?* Global **Equity** Research, UBS Warburg **(Aug.** 20, 2002); *Telecom All Seven Years On - The UNE Shock Wave Belatedly Reverberates Around the RBOCs – And How!* Merrill Lynch (Sept. **23,** 2002).

debate. In Section V, we briefly consider the validation of our findings. Concluding comments are provided in Section VI.

II. Current Costs, **Embedded** Costs, **and** TELRIC

Recent financial analyses by Capital Commerce Markets ("CCM"), Merrill-Lynch ("ML"), and UBS Warburg ("UBS") have focused attention on the general charge by BOC's that UNE-P pricing is "confiscatory" (*i.e.,* a rate set by government that is below costs and therefore constitutes an unlawful takings under the Constitution).[15] While economists are unlikely to be fully convinced by such analyses (relying, as they do, on the validity of accounting cost data and other strong assumptions), any finding of consistently negative margins for element sales is a cause for concern, regardless of these caveats. Thus, it is worthwhile to evaluate some recent findings on this point in order to highlight the extent to which official concern is warranted.

The issue of the remunerative quality of UNE-P sales by the BOCs highlights several important points relevant to any financial analysis of firm activity. First, for reasons that need not be repeated here, caution should be attached to all such analyses that utilize accounting (rather than economic) costs.[16] In general, accounting costs are not equal to economic costs, and profitability in the *economic* sense is the appropriate yardstick for, and basis of, firm decisions. Thus, although we will calculate and present the common EBITDA margins in what follows, it is more realistic to view our work as a critique **of** the financial studies now in the spotlight, rather than as an independent attempt to assess the *economic* profitability of the BOCs.

Second, aggregation will play an important role in our analysis, as it does in the financial analysts' reports we evaluate here. From a theoretical point of view, however, any claim that element sales are "below costs," somehow defined, must be understood as amounting to a claim that "some set of elements are, in fact, sold on below cost terms." The claim that an element could be sold "below cost" is financially irrelevant if no one actually buys the element, or buys the element in combination with other elements priced above costs. Further, elements sold

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[15] **For** a primer on basic **I-alemaking principles,** *see* Mark Naftel and **Lawrence** J. **Spiwak,** THE TELECOMS TRADE WAR: THE UNITED STATES, THE EUROPEAN UNION AN@THE WTO (Hart Publishing 2000)

[16] **For** a general discussion on the use **of** accounting data, see Stephen Martin, ADVANCED INDUSTRIAL ECONOMICS (1993), Ch. 17.

for prices above costs, but below cost-plus-seller-rents, will "damage" the seller financially, in the same manner that a monopolist forced to yield its position is damaged. Damage of this sort is presumably not a public concern *per se*. These distinctions are largely unaddressed in the financial reports.

Also, as a matter of economic theory, TELRIC pricing is not designed to reimburse the element seller for "actual" or "embedded" costs.[17] Such embedded costs reflect the cumulative sum of the economic costs of resources acquired by the HOC over time, not the economic cost or "value" of the elements that were created with those resources. For example, a $10 steak burned to a crisp is not worth $10, since one could obtain the result - a lump of carbon - for less than $10. Nor is a 100-megahertz computer worth $1,000 today, despite the fact it sold for that amount a few years ago. In general, the economic cost of a product is the cost of the resources required by an efficient producer to *duplicate* all the valued services provided by that product.

The determination of wholesale prices for unbundled elements (particularly UNE-P) by State commissions has itself been the subject of recent research (Beard and Ford 2002).[18] Although Beard and Ford (2002) show that prices are not determined by either the BOCs' embedded costs or retail prices, the authors provide evidence that many State commissions set wholesale prices at a point about halfway between forward-looking costs (economic cost) and forward-looking cost plus the average retail margin. This latter value approximates the efficient component pricing rule ("ECPR") price, ignoring the lack of competition that gives rise to the relevant economic rents (*i.e.*, profits, loosely defined). Thus, while it is correct that TELRIC does not provided a mechanism for embedded cost recovery, it has been modified in practice to allow price increases that compensate the seller for a portion of retail margins.

Thus, the impact of element sales on BOC financial performance is a complex matter. BOC resistance to such sales is proof that the sales reduce BOC profits.

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[17] *See Section 251 Order supra* n. 3 ("Forward-looking cost methodologies, **like** TELRIC, are intended to consider the costs that a carrier would incur in the **future**"(¶ 682); "We read section 252(d)(1)(A)(i) to prohibit States from conducting traditional rate-ol-return or other rate-based proceedings to determine rates for interconnection and access to unbundled network elements" (¶ 703); ("We reiterate that the prices for the interconnection and network elements critical to the development of a competitive local exchange should be based on the pro-competition. forward-looking, economic **costs** of those elements, which may be higher or lower than historical embedded costs" (¶ 704)).

[18] *See supra* n.11

Competition inevitably erodes excess profits and this is desirable for everyone except for the BOC (and, potentially, its shareholders).[19] Financial analysts, such as those who produced the Merrill-Lynch analysis, are paid to advise investors, not to promote social welfare or competition. However, the BOC campaign against the current UNE-P environment seems to suggest that element sales actually threaten the financial solvency of the BOCs. Such solvency does depend on embedded costs, of course, as debt is a current obligation for the past use of resources.

In this Policy Paper, we calculate BOC margins for UNE-P sales that include embedded costs as contained in cost data given to the FCC by the BOCs, in order to credibly evaluate the implication of the recent analysts' studies that UNE-P is unprofitable for the BOCs. This allows a credible evaluation of the conclusion implied by recent Wall Sheet financial analysts' reports that UNE-P is unprofitable for the BOCs, potentially leading to under-investment and financial ruin for these telecommunications giants. We endeavor to measure revenues and costs as accurately as possible given the data sources available to us. In this way, we hope to shed light on the current debate over this matter, and potentially raise the sophistication of future studies on this topic by the financial community.

III. **BOC** Revenues **from** Wholesale Local Exchange Services

UNE-P is a combination of numerous unbundled elements including primarily an unbundled loop, unbundled switching, and unbundled transport. Related elements are signaling services necessary to route calls, daily usage files (describing customer calling) needed for billing purposes, and non-recurring charges levied when these elements are ordered, provisioned, or repaired. UNE-P CLECs also pay the BOC reciprocal compensation (in some states), and many continue to use the Operator Services and Directory Assistance ("OS/DA") of the BOC. OS/DA is purchased by the CLEC as a retail service, not as an unbundled element.[20] In some states, additional sources of revenue are present, such as the

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19 *See, e.g.*, C.K. Prahalad and Gary Hamel, *The Cor? Competence of the Corporation*, HARVARD BUSINESS REVIEW (May 1, 1990).

20 *In re Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, Third Report and Order and Fourth Further Notice of Proposed Rulemaking*, FCC **No.** 99-238, 15 *FCC* Rcd 3696 **(rel.** Nov. 5, 1999) ("*UNE Remand Order*") at ¶ 441-442.

Operational Support Systems ("OSS) charge of $0.55 per line, per month in New York.[21]

A. *Sources for BOC Wholesale Prices for UNE-P*

In an effort to measure BOC revenues from UNE-P, we evaluate four sources of revenue data: three reports from various financial analysts and confidential data provided to the authors by Z-Tel Communications. Z-Tel Communications is a CLEC that serves customers, via UNE-P, in 46 states. Given Z-Tel's actual experience with UNE-P, and its ability to estimate costs directly from the bills it receives from the BOCs, we consider Z-Tel's numbers to be the best indicator of BOC revenues from UNE-P.[22] 'lhat said, Z-Tel's experience might not be identical to that of other CLECs using UNE-P (*e.g.,* usage or density zone distributions may vary among CLECs). Given no indication that Z-Tel's experience is atypical for a UNE-P CLEC, we consider Z-Tel's experience to be representative.[23]

B. *Difficulties in Estimating Wholesale Prices for UNE-P*

Computing the BOCs' revenues from UNE-P is a difficult task. Financial analysts typically compute UNE-P revenues as if rates simply can be multiplied by usage and added to flat charges, but it is not that easy. For example, switching typically consists of a flat-rated port charge, features charges, and per-minute charges. In some states (IL, IN, WI), the usage costs are included in the port charge, and in others the feature charges are included in the port charge. In other states, usage and features charges are separate from the **port** charge. Additionally, CLECs vary in their demands for features, and their customers are likely to vary in their usage patterns. With respect to usage, the application of specific usage charges varies by BOC, and frequently varies within a single BOC region. For example, in some states, an intra-switch call incurs two-minutes of

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[21] This charge is intended to cover the expenses incurred by Verizon to allow its computer systems tu handle wholesale operations. *See* New York Tariff #10 Sec 5.9.3.

[22] Z-Tel has adjusted its costs *to* reflect recent changes in wholesale prices in a number of States. In many cases, 2-Tel does not yet pay these rates to the BOCs due to lags in the incorporation of new rates into thrir interconnection agreements.

[23] Data provided by SBC to the FCC iiidicates that Z-Tel's experience in the SBC region is typical, and that the distribution across density zones of UNE-P entry closely parallels the distribution of access lines across such zones. *See* SBC *Ex Parte,* CC Docket 01-338 (October 30, 20021

switching per minute of conversation (e.g. West Virginia), while in others an intra-switch call incurs only a single minute charge per minute of use. In some states reciprocal compensation is paid by the CLEC (the former Ameritech states), whereas other states have adopted a bill-and-keep arrangement. In some Verizon states, terminating switching and reciprocal compensation are treated as offsets in a type of pseudo bill-and-keep arrangement (*e.g.,* New York). In states where switching charges are usage sensitive, the usage of the customers can matter substantially (depending on the per minute switching rate). Computing transport cost is particularly difficult, and the application of charges varies substantially across states. Transport costs, however, are generally a small portion of total UNE-P revenues (typically less than 5% for Z-Tel).

C. *Revenues from Non-Recurring Activities*

Noli-recurring charges ("NRCs") are another source of revenues for the BOC from UNE-P, but these revenues are frequently ignored in the analysts' reports.[24] In principle, non-recurring charges compensate the ILEC for expenses associated with taking orders for and provisioning a line to a CLEC. For UNE-P, there are typically three categories of noli-recurring costs. For ordering and provisioning a customer, there is either a migration NRC or a "new install" NRC. The migration NRC is paid when the customer already has service with the ILEC, whereas the "new install" NRC is paid when the customer does not have existing service.[25] Because ARMIS data includes all labor and provisioning expenses regardless of whether such costs relate to services provided to the ILEC itself or its CLEC customer-competitors, the costs related to ordering and provisioning services to CLECs are included in the ARMIS expense data. Because the expenses related to such activities are included in the analysis on the expense side, it is therefore necessary to include revenues from NRCs in the analysis on the revenue side.

Publicly available information from CLECs suggests that about one-third of customers are new installs, and we assume that this is typical for the purposes of

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[24] CCM includes some revenues for NRCs in its analysis, but the charges appear to be grossly understated and are amortized over 3 years (which is a relatively long customer life and an inappropriate method by which to assess BOC revenues from NRCs). For comparability purposes, the NRC revenues are excluded from the summary figures in Table 2.

[25] There are also NRCs for "change orders," such as when a customer wants a new phone number or some other change occurs to their account. We do not include revenues from such activities. thus making our NRC revenues understated.

our calculations.[26] The UNE Fact Report 2002 indicates that there were 9.4 million UNE-P lines at year-end 2001.[27] These access lines are allocated across states based on the relative shares from the Form 477 data.[28] FCC data on UNE-P lines (Form 477) indicate that UNE-P lines increase, on average, by about 3.6% per month (from June to December 2001). The UNE Fact Report 2001, alternately, presents data suggesting that UNE-P growth is about 6.9% per month (from December 1998 to December 2001). We use the average of the two numbers (5.25%), and assume a churn rate of 5%,which is added to the customer base growth rate of 5.25% for a total migration/new-install rate of 10.25%.

Table 1. Average NRC Revenue for UNE-P

(Excluding Change Order NRCs)

BOC	Share	UNE-P Lines	Avg. NRC	Per-Line
Verizon	39%	3.63M	13.12	1.34
BellSouHi	11a	1.03M	12.27	1.26
SBC	42%	3.97M	25.67	2.63
Qwcst	8%	0.77M	20.37	2.09
BOC-Wide	100%	9.40M	18.73	1.92

Access line weighted NRCs by BOC (one-third new install, two-thirds migration) are presented in 'Table 1. To compute the per-line NRC, the average BOC NRC is multiplied by the 10.25%growth/churn rate. As shown in Table 1, the average monthly revenue per UNE-P line from NRCs is $1.92 and ranges from $1.26 in the BellSouth Region to $2.63 in the SBC region.

[26] Testimony of George S. Ford on Behalf of Z-Tel Communications, IN Cause 40611-SI (November 11, 2001).

[27] UNE Fact Report 2002, published by the United States Telephone Association, Table 3

[28] The Form 477 data does not include data for all States due to confidentiality concerns, so we rely on the total number of UNE-P lilies from *the* UNE Fact Report 2002, using the State specific information from the 477 data to allocate across BOCs.

D. *Wholesale Prices for UNE-P*

Keeping in mind the difficulties of accurately calculating UNE-P revenues, the estimates of CCM, ML, UBS and Z-Tel are summarized in Table 2. Estimates are provided at the BOC level only, to protect (to some degree) the confidentiality of the Z-Tel data. 'Table 2 illustrates the sizeable understatement of UNE-P revenues by the financial analysts. Z-Tel pays the BOCs about **43%** more than the UBS estimates, **30%** more than the ML estimates, and **11%** more than the CCM estimates (without NRCs). These differences may emerge from differences in the distribution of loop rates across density zones, different usage patterns, different assumptions regarding the number of features purchased, the exclusion of costs related to some elements, and many other reasons.[29] CLECs have indicated that usage is one primary driver of **the** differences between actual costs and the costs estimated by the analysts.[30]

Also observe (in Table 2) that, on average, the inclusion of the NRC revenue increases BOC revenues from UNE-P by about 9%. Overall, actual CLEC experience suggests that the revenues received by BOCs are considerably higher than the financial analysts' estimates indicate. This general understatement of revenues by financial analysts is important, since when evaluating EBITDA margins (or any margin for that matter) small changes in revenues or costs are reflected directly in the margin.

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[29] Differences iii loop rates explain about $0.36 of the difference between Z-Tel and CCM, on average. UBS assumes 80% of access lines are in the Urban (Zone 1) density zone. Recent SBC data suggests that only 25% of UNE-P lines are in the Urban zone. *See* SBC *Ex Parte*, CC Docket No. 01-338 (October 30, 2002).

[30] *See, e.g.*, Z-Tel Letter and Sorgi Letter, *supra* n. 13.

Table 2. BOC Specific UNE-P Revenues Per Line

	UBS	MI.	CCM	Z-TEL
Without NRC Revenue				
Verizon	15.08	17 29	20.20	23.08
BellSouth	18.79	19.97	24.18	31.54
SBC	13.98	15.02	17.31	17.94
Qwest	18.53	21.05	23.98	22.54
BOC-Wide	15.75	17.37	20.30	22.51
With NRC Revenue				
Verizon	16.43	18.63	21.51	24.43
BellSouth	20.05	21.23	25.64	32.80
SBC	16.61	17.65	19.94	20.57
Qwest	20.61	23.14	26.07	24.63
ROC-Wide	17.67	19.29	22.22	24.43

There are two methods by which the quality of the analysts' estimates can be evaluated, and these two methods are best applied jointly. First, we can evaluate the average revenue (at the BOC-level) to determine how close the estimates are to actual experience. Table 2 provides such a comparison, and indicates the financial analysts' estimates of revenue are far below actual experience. Second, we consider the fact that the BOC average revenues are averages of state-level UNE-P revenues per line. Because a good estimate of a BOC's *average* revenue from a UNE-P line could arise from state-level revenue estimates that are entirely unrelated to what CLECs actually pay, we also examine the correlation between the state-level revenue estimates and actual experience.,' A high positive correlation would suggest that the Wall Street analysts' estimates may accurately reflect a BOC's average UNE-P revenue per line. The correlation matrix is provided in Table 3. Although the correlation coefficients between the analysts' estimates and Z-Tel's actual experience are positive, the correlations are not very large (*i.e.,* not close to 1.00 which indicates perfect correlation). Thus, the analysts' estimates are "poor" reflections of actual revenues from UNE-P under both evaluation methods.

Considering both the level and correlation of the analysts' estimates to actual experience, the "best" analyst estimate of UNE-P revenues is provided by CCM, which underestimates Z-Tel's actual experience by about 11% and has a correlation coefficient of 0.68 (excluding NRCs). Most of this difference is observed in the BellSouth region. Even though 10% may seem to be a relatively small difference, the additional $2.21 in revenue it represents is important when

[31] For example, the number pairs (10, 20) and (25, 5) both average to $15, but the average is based on ver) different underlying values

computing EBITDA margins. Further, on a state-specific basis, there may be very large differences that are masked in the average (but revealed to some degree by the correlation coefficient). For example, in one state, CCM underestimates Z-Tel's wholesale prices by 56%. In 7 out of 46 states (15%), CCM understates BOC wholesale prices by 25% or more. In some cases, CCM overstates the BOCs' wholesale prices (but none by as much as 25%). Overall, CCM understates BOC revenues for 65% of states with an average understatement of 16%, whereas CCM overstates revenues for 35% of states with an average overstatement of 8%. Both the UBS and ML estimates have lower correlation coefficients and grossly understate Z-Tel's actual UNE-P expenditures; therefore, we ignore these latter two estimates in the analyses that follow.

	CCM	ML	UBS	ZTEL
CCM	1.00	0.87	0.66	0.68
ML	0.87	1.00	11.77	0.64
UBS	0.66	0.77	1.00	0.57
ZTEL	0.68	0.64	0.57	1.00

Ekelund and Ford (2002)[32] find that the demand curve for UNE-P is highly elastic (own-price elasticity of demand is estimated to be –2.7, indicating a 10% increase in price reduces the quantity of UNE-P by 27%), implying that higher wholesale prices are related (*ceteris paribus*) to lower CLEC activity.)' If *so*, access line weighted averages of UNE-P revenues may not be reasonable proxies for actual BOC revenues. On the other hand, high NRCs or other regulatory or strategic barriers to entry may discourage competitors even if there are relatively low wholesale prices in the state (*e.g.*, Ohio).[34] Additionally, abnormally high wholesale prices are typically restricted to "smaller" states (though not always), *so* the higher wholesale prices will be discounted in the average. **As** a check on the reasonableness of the access-line weighted average UNE-P revenues, Table 4 presents average UNE-P revenues for the BOCs using the number of UNE-P lines in the state (Form 477 data).

Table ***4.*** Effect of Alternate Weights on UNE-P Revenues

Without NRC Revenue

	CCM (Access Lines)	CCM (UNE-P Lines)	Z-TEL (Access Lines)	Z-TEL (UNE-P Lines)
Verizon	20.20	17.67	**23.08**	18.75
BellSouth	24.38	24.21	**31.54**	**30.88**
SBC	**17.11**	19.87	**17.94**	19.61
Qwest	23.98	24.48	**22.54**	**23.13**
BOC-Wide	20.30	19.69	**22.51**	**20.50**

Table 4 suggests that on a BOC-wide basis, the access line weighted average approximates the competition-weighted average UNE-P revenues (as of December 2001), particularly for the Z-Tel data.[35] The Verizon region shows the largest difference and the overstatement is attributed to the high CLEC

[32] Robert B. Ekelund, Jr. and George S. Ford, *"Preliminary Evidence on the Demand for Unbundled Elements in Telephony,"*, ATLANTIC ECONOMIC JOURNAL, Vol. 30, 2002 (forthcolning). The reduction in UNE-P lines is not compensated for by **an** increase in lines from other modes of entry. *See* T. Randolph Beard and George S. Ford, Make-or-Buy: Unbundled Elements as Substitutes for Competitive Facilities in the Local Exchange Network, PHOENIX CENTER POLICY PAPER NO. 14 (September 2002) (http://www.phoenix-center.org/pcpp/PCPP14.pdf).

[33] *Blaming High UNE Rates, AT&T Says It Will Avoid Floridu*, TR DAILY (Sept 10, 2002).

[34] The Ohio PSC reduced the NRC (in October 2001) for UNE-P from $111 to $0.74. PUCO Order, 96-0922.00-1368, October 4, 2001 or 96-922-TP-UNC, **00-1368-TP-ATA.** PUCO News Release, October 4, 2001 (96-922-TP-UNC).

[35] A recent filing by SBC indicates that 28% of UNE-P lines are Urban, 41% Suburban. and 31% Rural (in *its* region). Residential lines make up 74% of total UNE-P lines and are distributed 25% Urban, 41% Suburb and, and 34% Rural. SBC *Ex Parte*, CC Docket 01-338 (October 30,2002).

penetration in New **York** state, which has below-average wholesale prices for the Veriaon region. In the other three BOC regions, the access line weighted average revenue is either less than or very close to the weighted average revenue based on UNE-P lines.

While there arc difterences in the access line and UNE-P line weighted average, we restrict our attention to the access line weighted averages. Historical rates have had an important impact on UNE-P penetration across states, and some of the more egregious pricing errors have been remedied.[36] Thus, the distribution of UNE-P lines will, no doubt, change over time so that the current UNE-P line weighted average will not be indicative of future average revenues. Indeed, using recent data on UNE-P lines in the SBC region and the CCM loop data, the UNE-P line weighted average exceeded the access line weighted average in 9 of 10 states (excluding Nebraska, which has only **39** residential UNE-I' lines). Across the region, however, the averages differed by only **1%.** Thus, the access line weighted average appears to be a reasonable proxy.[37] Table 4 allows the reader, however, to adjust the revenue figures in Table **2** to coincide with UNE-P line weighted average revenues, if desired.

IV. Retail and Wholesale **Costs per Access** Line

'Through the Automated Reporting Management Information System ("ARMIS"), the BOCs report detailed cost information to the FCC. This data is highly disaggregated, unlike the financial forms submitted to the Securities and Exchange Commission. Using this data, we compute the average retail and wholesale cost per line for each BOC. The ARMIS does not, however, directly allocate costs between retail and wholesale functions. To compute wholesale costs, we exclude, as best we can, costs associated with the provision of retail services by the BOC. Once the wholesale costs are computed, we can then compare these wholesale costs to revenues received from CLECs using UNE-P.

BOC expenses to provide regulated and unregulated telecommunications services are provided in ARMIS Form 43-03.[38] The major categories of operating

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[36] **High historical** UNE rates **in** California, the **largest access line market** (*i.e.*, **State) in the United States,** have **deterred** entry in that **market, Now, however, the** UNE **rates** in California **are relatively attractive** compared with other **States.** Thus, we **expect** more competition **in** California in the future than **in the past.** Similarly, historically **high** NRCs in **Ohiosquelched entry in that State.**

[37] SBC *Ex Parte, supra* n. 35

[38] Other **forms provide** similar information, **often at a higher** or **lower level of aggregation.**

costs from Form 43-03 are summarized in Table 5. We include only "Regulated Costs" from Form **43-03,** since unregulated services are not provided to UNE-P providers as UNEs.[39] ARMIS row numbers ending in "0" indicate summary categories, so that each category of operating costs listed in Table 5 is further disaggregated in Form 43-03. Our analysis is limited to the summary categories only.

Table 5. Expense Categories ARMIS Form **43-03**

Row_#	Row_Title
6110	Network Support
6120	General Support
6210	Central Otfice Switching
6220	Operator Systems
6230	Central Office I'ransrnission
6310	Information O/T
6410	Cable and Wire Facilities
6510	Other PP&E Expense
6530	Network Operaiions
6610	Marketing Expense
6620	Services Expense
6540	Access Expense
6710	Executive and Planning
6720	General & Administrative

While Form 43-03 provides expense data at the state level, it appears (to us) that the allocation of expenses across states does not allow for reasonable state-specific estimates of expenses to be computed. For example, negative expenses are listed in many cases.[40] Also, expenses of nearly all types appear to be over-allocated to New York, Georgia, Texas, and Colorado - states where the BOCs' corporate headquarters are located. This finding is somewhat unsurprising, given that many non-geographic specific functions will be located at or near corporate headquarters. It is not the case, however, that UNE-P rates in Georgia should be higher than Alabama so that corporate overhead can be recovered in Georgia alone. Such problems related to expense allocations across states suggest that expenses can be computed more accurately for each BOC than for each state. While we compute EBITDA margins at the state level (see Attachment

[39] Unregulated expenses equal about 14% of total (regulated **and** unregulated) expenses. Rcslricting the analysis to regulated expenses appears to be supported **by** SBC Communications. *See* SRC *Ex Porte,* CC Docket No. 01-338 (October *30,* 2002).

[40] For example, General and Administrative **expenses** (Row 6720) in Missouri are reported **as** -13,965 (million).

A), the expenses per state are equal across a BOC region.[41] We have no reason to believe that operating expenses differ more substantially across states within a BOC region than they do across BOCs.

A. *Avoided Costs*

'The important task at hand is to compute wholesale operational costs. To begin, we first eliminate costs that are retail in nature or are unrelated to the provision of switched access lines. First, we eliminate "Access Expense (Row 6540)" from wholesale costs (about 9% of regulated costs), because these expenses are the responsibility of the CLEC once the customer is acquired and provisioned. Second, we exclude expenses related to terminal equipment (PBX, public pay phones, *etc.*) from expenses because these services are not related to switched access lines or UNE-P (about 1.8%of regulated expenses). Terminal equipment expenses (Row 6310) are excluded from both retail and wholesale expenses for switched access lines.

Third, we make adjustments to "Marketing Expense," "Services Expense," "Executive and Planning," and "General and Administrative" expenses. For obvious reasons, (most) marketing and services expenses are excluded from wholesale costs (about **23%** of regulated operating expenses).[42] As a monopolist in the wholesale provision of local exchange network, marketing is presumably unnecessary. Services expense relates primarily to the retail customer base. The exclusion of OS/DA revenues from the revenue side of our analysis further warrants the removal of services expenses (which include operator services). Customer service will be required with wholesale customers, hut the expenses will not be equal to the level required for retail operations. Thus, we evaluate the effect of including small portions of current marketing and service expenses (10%)on wholesale costs. Further, we assume some small portion (10%) of network expenses (Rows 6110 to 6530) are avoidable by a wholesale-only local exchange carrier (in some scenarios), and these avoidable costs may reflect reduced requirements of the wholesale firm for buildings, aircraft, artwork, and so forth. Finally, the overhead expenses (*i.e.,* executive, planning, general and

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[41] Merrill-Lynch computes a BOC-wide expense estimate, and then computes State-wide expenses by increasing or decreasing this average cost estimate to maintain a constant EBITDA margin over estimated revenues. Our approach is a substantial improvement over this purely arbitrary calculation.

[42] Verizon describes "billing, marketing, sales" as avoided cost. See *Ex Parte* Presentation, Verizon Communications, CC Docket No. 01-338 (August 16,2002).

administrative) should be higher for a firm vertically integrated into retail and wholesale services than for a firm specializing in wholesale services alone. We consider various assumptions about avoided overhead costs, but believe 35% is a reasonable assumption for avoided overhead.[43]

B. *Allocation* 1a *Switched Access Lines*

Computing wholesale (and retail) expenses for a UNE-P access line requires us to allocate expenses across switched and special access lines (Form **43-03** does not). One approach is to assume that voice grade equivalent access lines ("VGEs") bear an equal share of expenses. This assumption renders an allocation of total expenses to switched access lines of 66%, on average (in 2001). An alternative allocation method is to use the BOCs' allocation of expenses between the **two** types of lines from Form **43-01,** where about **92%** of expenses are allocated to switched access lines.[44] It is important to keep in mind, however, that the BOCs' have strong incentives to overallocate expenses to switched access lines (where they face little competition) and underallocate to special access lines (where some competitive pressure exists in select geographic markets). In reality, the proper allocation probably lies somewhere between these two extremes (66% to 92%). For example, SBC Communications indicates in filings before the FCC that about 75% of gross expenses per line are assignable to switched access lines (which approximates a switched access line bearing twice the cost **of** a VGE).[45] We use 75% for the calculations of EBITDA margins.

C. *Summary of Cost Estimates*

Table 6 summarizes the BOC-wide average retail and wholesale costs computed under a variety of assumptions regarding avoided cost and the switched/special allocation factor. Average retail expenses per line are about

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43 **Our assumptions** about **avoided** costs related **to access, terminal equipment, and** marketing/sales **and** other expenses amount **to about** a 45% **reduction** in **total expenses** (of **these types)** UBS Warburg assumes **25%** of G&A **expenses are nvoided. Thus, assuming 35%** of G&A **expenses are avoided represents** the **average** of these two **estimates** of **avoided expenses.**

44 **We note** that there **is no correlation between** the share of **special** access **lines to total access** lines and **the share** of **expenses allocated** to **special access lines** by **the** BOCs **(the correlation coefficient** is *0.02).*

45 SBC *Ex Parte,* **CC Docket** 01-338 **(October** 30, 2002).

range from $15.33 to $21.44, which is comparable to ML's estimate of $19.95 and UBS's estimate of $19.10.[46]

Table 6. BOC-Wide Retail and Wholesale Costs for Switched Access Lines

	Marketing & Customers Services (6610, 6620)	G&A (6710, 6720)	Access (6540)	Terminal Equipment (6311, 6341, 6351, 6426)	Network (6110 through 6530)	Allocation to Switched	BOC-Wide Average Cost Per Line
Case 1	100%	100%	100%	0%	100%	92%	21.44
Case 2	100%	100%	100%	0%	100%	75%	17.41
Case 3	100%	100%	100%	0%	100%	66%	15.33
Case 4	0%	100%	0%	0%	100%	75%	11.53
Case 5	0%	100%	0%	0%	100%	68%	10.21
Case 6	10%	100%	0%	0%	100%	75%	11.96
Case 7	10%	65%	0%	0%	100%	75%	10.87
Case 8	5%	50%	0%	0%	90%	75%	9.31
Case 9	10%	65%	0%	0%	75%	75%	8.68
Case 10	10%	65%	0%	0%	90%	75%	9.99

Wholesale expenses per line range between about $9 to $11 under a diverse array of assumptions. In every case, however, wholesale costs are considerably less than the estimates of either ML ($17.46) or UBS ($17.02).[47] In fact, under some plausible set of assumptions for retail expenses (*e.g.*, Case 3), the wholesale cost estimates of ML and UBS exceed even the expenses related to the provision of retail services. Table 6 suggests that retail avoided costs equal about 30 to 50% of retail costs, not the 12.5% assumed by ML or the 11% assumed by UBS.[48] Moreover, UBS's assumed avoided cost of 11% is barely sufficient to account for

[46] The similarities are not surprising, given that ML uses BOC aggregate data from the FCC's *Statistics of Communications Common Carriers*, which is based on the ARMIS data. For State-level estimates of costs, ML simply adjusts the BOC-wide average operational costs in direct proportion to differences in revenues across States (*i.e.*, the retail EBITDA margin is equal in every State). UBS computes average retail costs by assuming a constant EBITDA margin (across States within a BOC region) on retail revenues, ignoring actual cost data

[47] CCM also provides cost estimates, but these estimates exceed retail revenues (with costs averaging about $45 per line). Consequently, we do not believe these estimates are credible or worthy of a detailed evaluation. Capital Commerce Markets, *Status & Implications of UNE-Platform in Regional Bell Markets* (November 12, 2001).

[48] Note that the avoided cost discounts computed using the ARMIS data are not directly comparable to the Total Service Resale discounts; those discounts are applied to revenues, not costs. Additionally, the ILECs continue to incur costs for resellers that are avoided for UNE-P (e.g., Access Expenses).

unquestionably avoidable expenses such as access (9%)and terminal equipment expenses (1.8%)much less avoided costs related to sales and marketing *(23%* of total costs) and overhead. Clearly, the financial analysts have substantially understated avoided costs.

Considering the systematic understatement of UNE-P revenues and the overstatement of wholesale costs, it is no surprise that the analysts find the UNE-P wholesale business unprofitable for the BOCs. We have made clear here, however, that the analysts' findings are (at least partially) the result of poorly estimated revenues and expenses, and consequently provide little information of value either in an investment or policy context.

Table 7. BOC SpecificRetail **and** Wholesale Costs

	Retail Costs	Wholesale Costs
Verizon	17.77	10.42
BellSouth	**17.70**	9.46
SBC	**17.12**	Y.91
Qwest	16.97	9.93
BOC-Wide	17.41	9.99

In our opinion, the avoided cost assumptions of Case 10 (in Table 6) are plausible and conservative: marketing and services expenses are 10% of the retail level, G&A is 65% of the retail level, other operating expenses are 90% of tlie retail level, and 75% of expenses are allocated to switched lines. For Case 10, the BOC-wide average wholesale cost is $9.99.[49] Wholesale costs, in this particular case, are about 40% less than retail costs.[50] Thus, our analysis suggests that the average wholesale operating cost per line is probably about $10. BOC-specific estimates of retail and wholesale costs (using Case 10) are summarized in Table 7. State-specific estimates are provided in Attachment A using Case 10 assuniptions.

[49] Excluding expenses related to retail customers, SBC estimates operating costs of $12 per switched line ($9in "Plant & Network Expenses" and $3 in "Corporate Operations" expenses). *See* SBC *Ex Parte*, CC Docket No. 01-338 (Oclobrr 30, 2002). Using our Case 10 assumptions on dvoided costs, SBC's reported expense figures produce a monthly cost of $10.45per switched access line.

[50] In an *Ex Parte* filing at the FCC, SBC presents expense estimates (allegedly) for wholesale operations that represent about a 30% discount off Total Operating Expenses (Line 720, including expenses lor both switched and special lines). If 90% of "Customer Services" expenses are excluded from SBC's estimate of costs, then its *own* estimate of "wholesale" expenses represents about a 45% discount off total expenses. See SBC *Ex Parte*, CC Docket No. 01-338 (October 30, 2002).

Table 8. Marginal Effects of Assumptions

(Dollar change for a one percentage-point change in assumption)

	Marketing & Customers Services	G&A	Other	Allocation to Switched
Verizon	0.039	0.051	0.095	0.147
BellSouth	0.057	0.036	0.089	0.133
SBC	0.051	0.019	0.107	**0.137**
Qwest	0.048	0.041	0.091	0.139
ROC-Wide	0.048	0.035	0.098	0.140

Many alternative assumption sets could be used to compute estimates of wholesale costs. In our computations, we consider a few sets of assumptions. To assess the effect of alternative assumptions, the "marginal effects" of each input are summarized in Table 8. For example, the last cell in column two of Table 8 indicates that for every one percentage-point change in "Marketing and Customer Service" expenses allocated to wholesale lines, the monthly per-line wholesale operating costs increases by $0.048 at the BOC-wide level. The last cell of column 5 indicates that a one percentage-point increase in the allocation of expenses to switched access lines increases wholesale costs by about $0.127 (at the BOC-wide level). The other cells in the table are interpreted in the same manner.

V. Revenues, Expenses, and the EBITDA Margin

To evaluate the *accounting* profitability (not *economic* profitability) of the wholesale UNE-P relative to its the retail equivalent, the EBITDA (earnings before interest, taxes, depreciation and amortization) margins for UNE-P wholesale services sold by the BOCs are computed. These margins equal the difference between UNE-I' revenues from Table 2 and the wholesale costs from Table 7. A minimum requirement for accounting profitability, on average, is that the revenues from a service cover the operating expenses incurred in providing it, excluding any costs associated with capital investment. A positive EBITDA margin indicates that this minimal standard of accounting profitability is met. The EBITDA margins, presented for each BOC, are summarized in Table 9.

Table 9. EBITDA Margins **for BOC Wholesale Services (UNE-P)**

	UNE-P Revenues	Wholesale Costs	EBITDA Margin
Verizon	**24.43**	10.42	14.00
BellSouth	32.80	9.46	*23.33*
SBC	20.57	9.91	**10.67**
Qwest	***24.63***	9.93	14.70
BOC-Wide	24.43	9.99	14.43

On average, using UNE-P revenues provided by Z-Tel (including NRCs) and the Case 10 assumptions for wholesale costs, the average EBITDA margin for the BOCs is $14.43, or 60% of wholesale revenues.[51] The margins vary substantially, with the largest margins found in the BellSouth region **($23.33)** and the smallest in the SBC region ($10.67). Considering its relative low EBITDA margins on wholesale services, SBC's leadership role in questioning UNE-P and TELRIC is unsurprising.

Table 10 allows for a direct comparison between wholesale margins and retail margins.[52] The retail EBITDA margin for the BOCs averages $17.31 (or 49% of retail revenues).[53] Thus, wholesale margins are approximately 17% lower than retail EBITDA margins (= 1 - [14.43/17.31]). Note that as with wholesale margins, SBC has the lowest retail EBITDA margin ($15.87). Also observe that BellSouth's wholesale EBITDA margin exceeds its retail margin, in part because its UNE-P revenues are very close to its retail revenues. BellSouth also has the largest difference between retail and wholesale costs (*i.e.,* avoided cost). We note that BellSouth's wholesale prices in many states have recently been reduced by state regulatory commissions, and those reductions will affect CLECs' costs in the near future. Overall, the analysis suggests that BellSouth has less to lose than the other BOCs in terms of an immediate financial impact related to UNE-P for two reasons: (1) BellSouth's relatively high wholesale prices attenuate

[51] These margins are generally consistent with those reported in PHOENIX CENTER POLICY PAPER NO. **16,** *supra* n. 11, which reports **an** average EBITDA margin of 40%. The differences in the margins **are** attributed mostly to the use of the CCM revenue data **in** the earlier paper and to minor differences in the computation of wholesale costs per line.

[52] Retail prices are provided by UBS and ML, **and** they are essentially the same. We **use** ML's estimates in the table.

[53] UBS Warburg "implies" expenses based on an EBITDA margin of 40 to **45% (based** on each ***BOCs*** rompmy-wide **EBITDA margin),** computed on **estimated *retail*** revenues per line for each State.

competitive entry (*see* Table 1); and **(2)** BellSouth's wholesale margins are the highest among the BOCs.

Table 10. EBITDA Margins for BOC Retail Residential Service

	Retail Revenues*	Retail Expenses	EBITDA Margin
Verizon	36.30	17.77	18.53
BellSouth	35.49	1770	17.79
SBC	32.99	17.12	15.87
Qwest	34.96	16.97	17.99
BOC-Wide	34.72	17.41	17.31

* Based on ML estimates. Residential Services only.

Positive EBITDA margins do not guarantee accounting profitability, as costs associated with capital investment (*i.e.,* depreciation and amortization) are left out of the calculations. The EBITDA margins in Table 9 appear sufficiently large to cover depreciation and amortization expenses for the BOCs. For example, BellSouth and Verizoii report depreciation and amortization expenses of about $5.45 per line.[54] ARMIS reports depreciation and amortization expenses much higher than the financial statements, and this is somewhat expected given the different treatment of depreciation between ARMIS and financial reporting. We have no information by which to reduce depreciation expenses to account for terminal equipment or depreciation and amortization expenses related to the provision of retail services alone (*e.g.,* stadium naming rights, computer systems, etc.). However, SBC reports an investment per switched access line of $499 to $1,100, which implies, for the latter, a monthly depreciation/amortization expense of $4.58 (straight line, 20 years; $2.08 for the former).[55] **Thus,** we use this $4.58 (average) depreciation and amortization expense is an approximation of depreciation/amortization expenses per switched access line. The EBITDA margins summarized in Table 9 are all more than adequate *to* cover depreciation and amortization expenses of about $5, so UNE-P renders positive EBITDA and EBIT (earnings before interest and taxes) margins

[54] *See* BellSouth **and** Verizon's 2001 Annual Reports or Form 10-K's for the relevant **data.** Our analysis is restricted to the wireline communications divisions of both companies. BellSouth reports 4,045M in depreciation/amortization **and** 67.336 million VGEs, whereas Verizon reports 9.332M in depreciation/amortization for 132 million VGEs.

[55] *See* SBC *Ex Parte,* CC **Docket** No. 01-338 (October 24,2002 andOctober 30,2002). The FCC's Hybrid *Cost* Proxy Model uses depreciation **lives** for switching and loop plant of 20 years or longer.

VI. Validation

Our analysis of wholesale costs indicates that, on average, the wholesale cost for a switched access line (*i.e.,* the type of line relevant to UNE-P) is $10 and depreciation/amortization expenses are about $5 on a per-line basis. These estimates suggest that current/embedded total wholesale expenses per line are about $15.

Ideally, there would be some way to validate our estimates with real-world experience. Recent statements by SBC's Chief Financial Officer ("CFO"),Randall Stephenson, provide such validation. Specifically, at the Bank of America Securities ("BAS) 32nd Annual Investment Conference (September 2002), Mr. Stephenson stated:[56]

> ... in the State of Texas its about a $20 [to] **$21** UNE-P. In the State of Texas you have a ... rational model; ... at 520 to 521 you have good vibrant competition, and it's not at such a level where we cannot earn money or are disincented to invest.

Our estimates suggest that with $20 to $21 in UNE-P revenues per line, the BOC is fully compensated for its wholesale operating costs and depreciation/amortization expenses. So, our estimates are consistent with the statement that "at $20 to $21" the BOC can "earn money" and is not "disincented to invest."

We re-iterate, however, that according to FCC policy wholesale prices should not be set such that the BOCs "earn money" at the current level of expenses. Wholesale prices are based on TELRIC, and TELRIC may be above or below current expenses.[57] The positive EBITDA and operating margins suggest that TELRIC, as interpreted and implemented by State regulatory commissions, is typically above current accounting costs (inclusive of depreciation and amortization)

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[56] Speech by SBC Chief Financial Officer Randall Stephenson at the BAS 32nd Annual Investment Conference, September 2002 transcription available on request: info@phoenix-center.com).

[57] TELRIC principles, in practice, provide very little constraint on the determination of wholesale prices. Generally, the concept of "forward-looking costs" is far more important to the determination ot wholesale prices in State proceedings. TELRIC is merely one type of forward-looking cost analysis.

VII. Conclusion

Recent reports on the financial consequences of UNE-P sales for Bell Operating Companies have drawn additional attention to long-standing complaints by the BOCs that such sales are confiscatory, and amount to "subsidized competition." Of course, no one expects incumbent firms to support any sort of unbundling at prices that a competitor would be willing to pay. Nevertheless, there is an important distinction between mandated unbundled element sales that are unwelcome, and mandated sales that actually threaten the viability of the incumbent providers. The BOCs' complaints establish that unbundled element sales are unwelcome, but not that they are, in any relevant sense, "below cost."

A number of recent financial studies find that mandated UNE-P sales produce losses for the incumbents, and that these losses, despite long-standing claims about the excessive profitability of long distance markets, are not offset through in-region, Inter-LATA toll operations permitted under the Section 271 process. The financial analyses by Merrill-Lynch, UBS, and others described in this Policy Paper, however, are designed specifically to provide investment advice and, as such, are not useful for evaluating the social impacts of required element sales. Indeed, from the investor's point-of-view, a firm that gained a monopoly might represent an excellent opportunity, although it is incorrect to argue from these premises that society should welcome such a development. On the other hand, financial analyses do serve a useful purpose, and the survival of the Bell companies is presumably a matter of concern for regulators and the public, as well as Wall Street.

This Policy Paper subjects the conclusions of these financial studies to careful scrutiny, and finds that they are largely without merit. Errors in both the calculation of unbundled element revenues, and in the wholesale costs of providing unbundled elements, are identified. Using actual payments by a representative CLEC, we find that revenues ordinarily reported in financial analyses are substantially understated. These understatements arise from several sources, including omission of certain nonrecurring charges, incorrect assumptions on the mix of loops purchased by competitors, and so on.

On the cost side, the publicly available ARMIS data can be used to construct measures of currents costs for wholesale element sales in a manner conceptually consistent with Bell protestations on these matters. While such costs are not economic costs, neither are they hypothetical, but instead they represent costs incurred by the incumbents and, therefore, are relevant for financial analyses of the type under discussion. We carefully examine a number of assumptions in an

effort to obtain realistic cost figures usable for EBITDA- type financial analyses. We do not use TELRIC costs, nor do we seek to identify the costs of efficient forward-looking network operations.

Our analysis suggests that positive EBITDA margins are the rule when costs and revenues are aggregated to the level of the BOC. Even the inclusion of depreciation and amortization does not materially alter this conclusion (i.e., EBIT margins are also positive). Further, we find positive EBITDA margins for wholesale element sales for individual states even when we utilize the understated revenue data published by Capital Commerce Markets. Unlike most financial studies released to date, we do not use speculative or indirect techniques to infer costs.

Concerns over the profitability of unbundled element sales reflect a widespread recognition that such sales are less profitable than an indefinite retention of monopoly power. While the BOCs would surely be better off if they were not required to accommodate competition, the emergence of effective competition in local markets is the primary policy goal of the Telecommunications Act of 1996. Regulatory actions that derail the unbundling process are tantamount to abandonment of the goals of the Act. In fact, declining margins are a hallmark of competition and a signal that the Act's implementation is promoting the desired effects.

Attachment A. State-Specific Estimates of Revenues, *Costs*, and EBITDA Margins

ST	BOC	CCM Revenues	ARMIS Coil	EBITDA	ST	BOC	CCM Revenues	ARMIS Cost	EBITDA
AL	BLS	24.81	Y.46	15.35	NC	BLS	24.35	9.46	14.89
AR	SBC	22.59	9.91	12.68	ND	QWESI	30.53	9.93	20.60
A7	QWEST	27.07	9.93	17.14	NE	QWESI	28.71	9.93	18.78
CA	SBC	18.09	9.91	8.18	NH	VZ	25.85	10.42	15.43
CO	QWEST	24.47	9.93	14.54	NJ	VZ	16.48	10.42	6.06
CT	SBC	na	na	na	NM	QWESI	28.38	9.93	18.45
DC	VL	18.17	10.42	7.75	NV	SBC	na	na	na
DE	VZ	22.15	10.42	11.71	NY	VZ	18.51	10.42	8.09
FL	BLS	26.47	9.46	17.01	OH	SEC	17.56	9.91	7.65
GA	BLS	25.09	Y.46	15.63	OK	SBC	27.66	9.91	17.75
IA	QWLST	25.54	9.93	15.61	OR	QWESI	24.38	9.93	14.45
ID	QWESI	28.91	9.93	18.98	PA	VZ	20.57	10.42	10.15
II	SBC	18.44	9.91	8.53	RI	VZ	21.04	10.42	10.62
IN	SBC	14.68	9.91	4.77	SC	BLS	25.84	9.46	16.38
KS	SBC	22.27	9.91	12.32	SD	QWESI	33.80	9.93	23.87
KY	BLS	26.34	9.46	16.88	TN	BLS	22.14	4.46	12.68
LA	BLS	26.63	9.46	17.17	TX	SEC	23.85	Y.91	13.94
MA	VZ	26.76	10.42	16.34	UT	QWESI	22.63	9.97	12.70
MD	VZ	27.59	10.42	17.17	VA	VZ	23.19	10.42	12.77
ME	VZ	23.41	10.42	12.99	VT	VZ	26.33	10.42	15.91
MI	SBC	17.13	9.91	7.22	WA	QWESI	22.86	9.93	12.93
MN	QWEST	27.11	9.93	17.18	WI	SBC	26.48	9.91	16.57
MO	SBC	25.35	9.91	15.4-1	WV	VZ	45.36	10.42	34.94
MS	BLS	31.08	9.46	21.62	WY	QWEST	33.77	9.93	23.84
MT	QWEST	36.73	9.93	26.80	AVG		22.22	9.99	**12.21**