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GEOGRAPHIC DEAVERAGING OF WHOLESALE PRICES FOR LOCAL TELEPHONE SERVICE IN THE UNITED STATES: SOME GUIDELINES FOR STATE COMMISSIONS

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EXECUTIVE SUMMARY

Passage of the Telecommunications Act of 1996 was intended to promote competition and reduce regulation in order to secure lower prices and higher quality service for American telecommunications consumers. As competition emerges in the local telephone industry, state regulators must reevaluate practices that were established for an industry largely consisting of regulated monopoly firms. Once such practice is the use of cross-subsidies in the pricing structure of telecommunications services.

The promotion of efficient competition in the last ten miles of the telecommunications industry hinges on successfully replacing the distorted signals created by such subsidies with clear signals based on economic costs. In an effort to provide clear signals to potential entrants to the local telephone industry, the Federal Communications Commission (FCC) has ordered each state to geographically deaverage wholesale prices for local telephone service by May 1, 2000. How this policy is implemented in each state will play an important role in the structural evolution of this industry, making this issue an important and timely public policy problem to address.

This report offers some guidelines for state commissions faced with meeting the FCC requirements for geographic deaveraging. After explaining the impact of geographic deaveraging on the development of local competition and examining the variation in cost of providing local telephone service in the United States, this report proposes a two-phase approach to address implementation of this policy. First, some long-run guidelines are proposed that assume state commissions have the time necessary to fully implement geographic deaveraging within their state. However, recognizing that the May 1, 2000 deadline is fast approaching, some short-run suggestions are provided to assist state commissions attempting to meet the FCC's time constraint.

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INTRODUCTION

With jurisdiction validated by the landmark Supreme Court decision of *AT&T v. Iowa Utilities Board* (1999),[1] the Federal Communications Commission (FCC) has ordered each state to geographically deaverage wholesale prices for local telephone services by May 1, 2000.[2] By this date, states are required to establish different prices for interconnection and unbundled network elements (UNEs) for a minimum of three geographic zones.[3] This requirement is expected to force the prices charged for these wholesale telecommunications services closer to their actual forward-looking costs by removing the subsidies that are created through statewide averaging. If done correctly, geographic deaveraging promotes efficient competition by making it possible to send a clear signal to potential entrants.

Exactly how geographic deaveraging is implemented in each state will play an important role in the structural evolution of the local telephone industry, making this a crucially important and timely public policy issue to address. While some states have made significant progress regarding geographic deaveraging, many have not yet begun proceedings on this topic or are deciding how to handle the FCC's order. The NARUC Telecommunications Committee asked the NRRI to prepare this report to assist state regulators now deciding how to implement geographic deaveraging within their state by outlining the salient issues under consideration and by assembling current information on recent state activity.

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[1] *AT&T v. Iowa Utils. Bd.*, 119 S. Ct. 721 (1999).

[2] See Federal-State Joint Board on Universal Service, CC Docket 96-45, Ninth Report and Order and Eighteenth Order on Reconsideration, FCC 99-306 (released Nov. 2, 1999).

[3] However, based on local circumstances states can appeal to have only two deaveraged rate zones. Appeals are considered by the FCC on a case-by-case basis.

While recognizing the value of wholesale deaveraging to promote competition, the state commissions have been concerned about the need for precise information on costs to allow accurate application of deaveraged prices for UNEs. They are also concerned about the relationship of wholesale deaveraging to rate rebalancing on the retail level, a prospect which has tremendous implications for universal service. Deaveraging of UNEs without parallel changes on the retail side creates its own problems for the development of competition. But deaveraging of both wholesale and retail prices can make retail rates less comparable and affordable, in contravention of universal service requirements of the Telecommunications Act of 1996.

This report proposes a two-phase approach to meeting the FCC requirements for geographic deaveraging. In the short run, a number of states have taken clear, straightforward steps to meet the May 1 deadline. These include establishing interim deaveraged rates (with permanent rates to be set when detailed cost studies are completed), using simple measures of population density, and keeping the differences in UNE rates for geographic areas very small. Some states may also need to request a waiver of the May 1 deadline while they finish company-by-company proceedings, or weave the issue of geographic deaveraging into generic proceedings on forward-looking economic costs or universal service. In the long run, we suggest that the geographic unit used for deaveraging should be as small as administratively feasible, should be based on both density and line length, and should be accomplished at the same time as deaveraging of retail rates. However, it should be noted that this report does not attempt to explore the complicated relationship between retail and wholesale rate deaveraging.

The next section of this report discusses the importance of deaveraging in promoting the goal of efficient competition in the local telephone industry. In doing so, instances that may cause too much or too little entry (relative to an efficient level) are described. In order to gain insight about the degree of geographic deaveraging required to meet the goal of efficient competition, a simple analysis of the variation in the cost of providing local telephone service in

the United States is offered in the following section. Next, we offer some general long-run guidelines for state commissions to follow when implementing the FCC's geographic deaveraging order. This is followed by a brief review of state actions to date and suggestions for feasible short-run solutions to the problem of meeting the May 1, 2000 deadline. We end with a short conclusion with some final thoughts on this issue.

DEAVERAGING AND THE DEVELOPMENT OF EFFICIENT COMPETITION

Efficient entry into the local telephone industry requires that the perceived cost of entry by a potential entrant reflect the actual economic cost of entry. In an environment where cost signals are distorted by averaging, efficient entry is not as likely to happen. In high cost regions, averaging will tend to understate the true cost of entry, while in low cost regions, averaging will tend to overstate the true cost of entry. The likelihood of promoting efficient competition is more likely by deaveraging the price of wholesale telecommunications services. However, this requires implementing an economically sound and accurate policy for geographic deaveraging. With this in mind, it is useful to understand the potential consequences if there is a failure to meet this requirement.

Results When Prices Are Above Actual Economic Costs

Consider first what would happen if the wholesale prices resulting from geographic deaveraging *overstated* the actual economic cost of providing local telephone service. This scenario would be likely to result in low cost (high density) regions if the geographic zones selected did not accurately reflect the real variation in economic costs across the state (that is, they remained too aggregated) or if the cost model selected were biased upward.

An overstated cost signal will result in uneconomic entry decisions on the part of potential entrants. Under this scenario, two extremes might result. At one extreme, a viable potential entrant planning to enter a market by purchasing UNEs may decide against entering a market altogether if it believes it is too costly to provide local telephone service. This outcome retards, rather than promotes, competition in the local telephone industry. At the other extreme, receiving an overstated cost signal might encourage a nonviable (facilities-based) competitor to build its own network. This outcome would result in costly and uneconomic duplication of an already existing network. In either case, severe efficiency losses are likely. Therefore, every effort should be made to avoid setting wholesale prices above the actual economic costs.[4]

Results When Prices Are Below Actual Economic Costs

Now consider what would happen if the wholesale prices resulting from geographic deaveraging *understated* the actual economic cost of providing local telephone service. This scenario would be likely to result in high cost (low density) regions if the geographic zones selected did not accurately reflect the real variation in economic costs across the state (i.e., they remained too aggregated), or if the cost model selected were biased downward.

Again, the degree and mix of entry would be distorted by an understated cost signal, but in the opposite direction of that described above. At one

[4] Empirical studies of entry to local telephone markets by competitive local exchange carriers (CLECs) verify that economic factors such as the profit opportunity, demand and cost characteristics, as well as the political and regulatory environment have played a large role in determining where CLECs have chosen to enter. Because of this, most CLECs have located in metropolitan areas. Since metropolitan areas tend to be high density (low cost) regions there is a high likelihood that the consequences described above will be realized. For empirical studies of entry to the local telephone industry, see Jaison R. Abel, "Entry to Regulated Monopoly Markets: The Development of a Competitive Fringe in the Local Telephone Industry," unpublished manuscript, The Ohio State University (1999) or James Zolnierek, James Eisner, and Ellen Burton, "An Empirical Examination of Entry Patterns in Local Telephone Markets," unpublished manuscript, The Federal Communications Commission (1999).

extreme, a nonviable entrant would be able to compete, either through resale or the purchasing of UNEs, at the subsidized cost of entry. At the other extreme, a viable facilities-based entrant may decide to rely on the existing network. As a result, the understated cost signal would encourage too much reliance on resale or purchasing of UNEs relative to the economically efficient level.[5]

The Rationale of Geographic Deaveraging

Completely eliminating the potential problems discussed above requires removing the subsidies that exist in the pricing structure of telecommunications services. Indeed, bringing prices closer to their actual economic costs is the rationale behind the FCC's order to geographically deaverage wholesale prices. Of course, the degree of deaveraging necessary to avoid the problems discussed above requires understanding the amount of variation that exists in the cost of providing local telephone service.

VARIATION IN THE COST OF PROVIDING LOCAL TELEPHONE SERVICE

Many factors act to determine the cost of providing local telephone service in the United States. For example, costs for switching, signaling, transport, transmission and the loop itself are used as inputs in most cost models.[6] However, it is well recognized that the cost of the loop drives almost

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[5] It is interesting to note that a perverse incentive exists for incumbent local exchange carriers to understate the cost of providing telephone service when determining deaveraged prices. This would help to prevent the development of facilities-based competition within their markets by making resale or UNE entry more attractive. Therefore, state commissions should be cautious when using information from cost studies generated by incumbent provider cost models.

[6] The cost models used to generate estimates of the cost of providing local telephone service rely on Total Element Long Run Incremental Cost (TELRIC) methodology. This implies the estimates generated should consider only forward looking

(continued...)

all of the variation that exists in providing local telephone service. Therefore, examining the variation in the cost of a loop should provide insight about the variation in cost that exists for providing local telephone service in general. In addition, doing so will provide a better understanding of the amount of geographic deaveraging that will be required before wholesale prices of local telephone service will accurately portray their economic costs.

A substantial portion of the cost of the loop is determined by wire length and the geographic density of the customer locations served. It should be no surprise that the cost of the loop increases as wire length increases and decreases as geographic density increases.[7] Thus, one should expect a large amount of variation in the cost of a loop both across the United States and within a specific state.

The FCC's Hybrid Cost Proxy Model calculates the cost of a loop for each wire center service area within a state. A wire center service area can be defined as the set of customer locations served by the same central office switch. Examining the variation in the cost of the loop based on these wire center calculations allows one to see just how much variation in the cost of a

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[6] (...continued)
costs. Therefore, which inputs are used in a specific model can vary depending on the user's definition of forward looking. Popular TELRIC cost models include the Benchmark Model, the Hatfield Model, the Telecom Economic Cost Model, and the FCC's Hybrid Cost Proxy Model.

[7] A simple Ordinary Least Squares (OLS) regression at the state level confirms this claim. The results of regressing average loop cost on total area (a proxy for line length) and population density are reported below with t-statistics in parentheses:

$$\mathbf{LOOPCOST}_i = \underset{(9.01)}{42.412} + \underset{(0.72)}{0.02977}\mathbf{AREA}_i - \underset{(-1.57)}{0.00457}\mathbf{DENSITY}_i + \varepsilon_i , \qquad i \ / \ \text{State}$$

$$\text{Degrees of Freedom} = 48 \qquad R^2 = 0.0677$$

Notice that, although insignificant at a conventionally accepted level, both total area and population density are of the expected sign. The insignificant coefficients are likely due to the high degree of aggregation involved with a state-level analysis. Nonetheless, some support is provided for both the conventional wisdom regarding the determinants of loop cost and the rationale for geographic deaveraging.

loop exists in the United States. Some standard statistics (e.g., mean, standard deviation, maximum, and minimum) describing the degree of variation in cost per loop for major incumbent telephone companies by wire center are provided in Table 1. From these statistics, comparisons both between and within states are made possible.

It is clear that a large degree of variation in the cost of a loop exists across the United States. In particular, states in the West tend to be associated with higher loop costs than states in other regions of the United States. Most likely, this is due in large part to area and density differences associated with the states in the West. Based on the large discrepancies that exist, one could argue that a national policy regarding geographic deaveraging is inappropriate. Instead, the FCC's decision to allow the states to determine for themselves how to implement deaveraging provides the best opportunity for the successful implementation of this policy.

It is also clear from Table 1 that a large degree of variation in the cost of a loop exists within each individual state. For example, based on calculations from wire centers alone,[8] ranges in loop costs exceeding $150.00 can be found in 22 states and ranges above $100.00 can be found in 37 states.[9] Combining this information with information about the average cost of a loop and the corresponding standard deviation allows one to gain insight about the variation in the cost of a loop within a particular state.

It appears that significant geographic deaveraging is needed to promote efficient competition in the United States telecommunications industry. Once again, states in the West tend to have the most variation in costs within them. However, it appears that enough variation exists in every state to warrant large-

[8] Calculations at the wire center service area level are still averaged, however, this level of aggregation is the smallest geographic area for which the FCC's cost model can produce accurate results. However, other models exist that produce estimates below the wire center service area level.

[9] A range can be calculated by subtracting the minimum from the maximum. For example, the range in California is $860.27, while the range in Ohio is $88.31.

TABLE 1

THE VARIATION IN COST PER LOOP FOR MAJOR INCUMBENT LOCAL TELEPHONE COMPANIES BASED ON WIRE CENTER CALCULATIONS

STATE	NUMBER OF WIRE CENTERS	AVERAGE COST	ST. DEV.	MAXIMUM	MINIMUM
AK	8	$33.99	$23.49	$85.33	$15.94
AL	147	$40.33	$20.77	$147.47	$15.18
AR	133	$52.65	$35.53	$165.24	$13.81
AZ	138	$41.61	$46.33	$324.58	$12.67
CA	605	$36.88	$59.64	$871.49	$11.22
CO	166	$41.41	$31.84	$187.05	$12.49
CT	124	$25.92	$8.23	$64.64	$17.20
DC	13	$14.19	$1.80	$16.85	$11.13
DE	33	$28.52	$12.34	$74.62	$14.57
FL	193	$24.78	$14.12	$116.27	$11.65
GA	178	$32.57	$17.96	$113.78	$12.57
HI	85	$25.75	$11.86	$64.84	$12.97
IA	157	$35.90	$20.04	$114.81	$13.40
ID	64	$53.40	$37.92	$189.15	$16.13
IL	275	$27.92	$19.56	$120.49	$10.16
IN	163	$35.50	$20.25	$129.46	$12.38
KS	167	$42.22	$26.79	$202.49	$14.41
KY	178	$48.71	$20.89	$114.20	$13.82
LA	228	$45.80	$27.67	$138.93	$12.93

TABLE 1 (Cont.)

THE VARIATION IN COST PER LOOP FOR MAJOR INCUMBENT LOCAL TELEPHONE COMPANIES BASED ON WIRE CENTER CALCULATIONS

STATE	NUMBER OF WIRE CENTERS	AVERAGE COST	ST. DEV.	MAXIMUM	MINIMUM
MA	266	$23.74	$12.92	$92.53	$9.87
ME	138	$53.58	$42.94	$367.13	$16.29
MI	334	$34.24	$23.56	$211.71	$10.70
MN	185	$41.79	$31.86	$203.89	$11.36
MO	213	$44.16	$28.01	$127.60	$13.42
MS	204	$58.79	$26.84	$144.86	$17.57
MT	72	$73.71	$66.25	$373.47	$18.23
NC	138	$28.59	$12.32	$74.15	$12.19
ND	35	$59.43	$39.28	$180.22	$15.76
NE	69	$50.06	$40.92	$264.35	$14.85
NH	117	$43.14	$24.84	$173.07	$16.39
NJ	203	$19.22	$4.76	$44.71	$14.01
NM	65	$43.97	$34.72	$151.83	$14.36
NV	43	$170.56	$212.75	$908.93	$15.63
NY	518	$30.45	$19.18	$115.10	$9.97
OH	250	$28.87	$17.05	$99.13	$10.82
OK	208	$48.78	$32.70	$165.58	$12.25
OR	78	$33.87	$23.09	$138.94	$12.52
PA	384	$28.22	$16.45	$135.71	$11.77
RI	30	$23.61	$7.39	$41.84	$15.08

TABLE 1 (Cont.)

THE VARIATION IN COST PER LOOP FOR MAJOR INCUMBENT LOCAL TELEPHONE COMPANIES BASED ON WIRE CENTER CALCULATIONS

STATE	NUMBER OF WIRE CENTERS	AVERAGE COST	ST. DEV.	MAXIMUM	MINIMUM
SC	116	$33.37	$14.21	$90.73	$14.28
SD	45	$64.34	$67.67	$364.20	$16.21
TN	194	$37.86	$18.24	$100.47	$12.51
TX	517	$38.57	$41.82	$430.03	$11.19
UT	71	$39.46	$50.41	$369.08	$13.80
VA	216	$34.01	$19.94	$88.67	$11.07
VT	83	$57.25	$32.28	$241.59	$17.34
WA	110	$30.50	$25.09	$163.15	$12.00
WI	128	$27.25	$15.96	$155.09	$11.51
WV	142	$47.26	$22.18	$122.92	$18.49
WY	29	$124.99	$217.04	$866.27	$21.33

SOURCE: Authors' calculations based on results obtained from the FCC's Hybrid Cost Proxy Model (revised model results, January 20, 2000).

NOTE: "Major telephone company" refers to the RBOC operating in a state except for AK (Anchorage Telephone Utility), CT (Southern New England Telephone), and HI (GTE Hawaiian Telephone). The number of wire centers reported corresponds only to those reported for the major telephone company.

scale geographic deaveraging. Whether or not the goal of promoting efficient competition in the telecommunications industry is achieved will be determined, in large part, by how state commissions implement geographic deaveraging within their state. The next section offers some general long-run guidelines to help state commissions realize this important public policy objective.

GUIDELINES FOR FULL IMPLEMENTATION OF GEOGRAPHIC DEAVERAGING

How geographic deaveraging is implemented in a particular state is likely to be unique, taking into consideration the features, attributes, and policy objectives important to that state. Therefore, this section is not intended to be a road map for each state to follow while satisfying the FCC's order to deaverage wholesale rates for local telephone service. Instead, it is intended to offer some general long-run guidelines for state commissions to consider as they implement their own specific policy. It is believed that these guidelines are important enough to be part of each state's policy, but flexible enough to adapt to each state's unique situation.

Guideline 1: The Geographic Unit Selected Should Be As Small As Administratively Feasible.

In order for geographic deaveraging to accomplish its objective, the geographic unit used to set wholesale prices must reflect the true economic cost of that area. The smaller the area selected for deaveraging, the greater the likelihood that this will be accomplished. This is because smaller areas are likely to be more similar in such aspects as population density and wire length—the drivers of loop cost.

Most states that have started to implement geographic deaveraging have chosen to use the FCC's three-zone minimum in setting rate zones. Given the

relatively large degree of variation in loop costs across the United States, it appears that doing so will not fully remove the averaging inherent in the existing system. Using the three-zone minimum suggested by the FCC will likely result in the problems that occur when wholesale prices *overstate* the actual costs of entering a high density (low cost) market such as a metropolitan area and *understate* the actual costs of entering a low density (high cost) market such as a rural area.

Which geographic unit will provide accurate signals to potential entrants? Perhaps no definitive answer, other than actual line costs, exists to this question. However, it is useful to consider what has been done in related policy areas. For example, the FCC has chosen to provide subsidies for high cost support of universal service at the wire center service area level. Since this policy area is related to geographic deaveraging, and since information of this nature is readily available from the FCC's Hybrid Cost Proxy Model, perhaps using the wire center level as the appropriate geographic unit on which to base wholesale rates would be a natural place to begin. Some commentators have even suggested selecting geographic units at a sub-wire center level.[10] However, the cost of implementation using a geographic unit smaller than the wire center may be very high since line count data at that level of aggregation may be largely unavailable.[11]

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[10] See William Meyer Jr., "Geographic Averaging for the Telecommunications High Cost Support Mechanism," *The National Regulatory Research Institute Quarterly Bulletin*, Vol. 20, No. 3 (Winter/Fall 1999): 223-227. Meyer argues that even the wire center service area contains too much averaging to accurately reflect economic costs. Using data for Maryland, he reports only 32 percent of the variation in estimated monthly line costs can be explained at the wire center level. He suggests using a cluster serving area (an area smaller than a wire center) as the geographic unit for basing subsidies for high cost support. In support of this idea, Meyer shows that the explanatory power of the variation in estimated monthly line costs increases to 57 percent if two cluster serving area classes are used, and increases to 93 percent if seven cluster serving area classes are used.

[11] Minnesota Public Utilities Commission, "In What Manner Should the Commission Meet the FCC's UNE Deaveraging Requirements?" Docket No. P-999/CI-99-465, Staff Briefing Paper, April 18, 2000.

Of course, from a practical viewpoint, administrative feasibility should be considered when establishing rate zones. Basing wholesale rates at the wire center level will result in a wide range of prices. In California, for example, over 600 wire centers exist for the major incumbent telephone company alone. In addition to the direct administrative difficulty created by selecting this geographic unit, this choice may also cause confusion among consumers and make it difficult for new entrants to advertise their prices.[12] Therefore, some judgment must be used to trade off the gains available from setting prices close to economic costs across the state with the losses incurred by confusing consumers and bogging down the commission with a huge administrative burden.

Guideline 2: The Geographic Unit Selected Should Be Based on Density and Line Length.

Although population density does determine much of the cost of wholesale telecommunications services, it is not the only factor. Another perhaps equally important factor is line length. Even the crude state-level calculations of the determinants of loop cost presented earlier in this report indicate that wire length is positively related to loop cost. Since correctly determining which geographic unit to use requires accurately estimating each area's underlying cost, both variables should be used to guide the selection process. This can be adequately accomplished by controlling for such factors as the distance from the central office, and topographic features such as the presence of mountains or bodies of water.

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[12] It should be noted that, although possible, each wire center does not have to act as a rate zone. Instead, rate zones having similar costs based on wire center calculations could be constructed within a state, thereby reducing the total number of rates to be set. This grouping could be done by examining the distribution of costs for "natural" break points or through careful statistical analysis.

Many states that have started their geographic deaveraging proceedings have relied upon population density as their main guide in setting rate zones. A notable exception to this is the plan that has been implemented in Colorado, discussed below.

Guideline 3: Retail and Wholesale Prices Should Be Geographically Deaveraged at the Same Time.

This report focuses on the importance of accurately determining the geographic zones used for the deaveraging of wholesale prices of local telephone service. Doing so will remove the subsidies that currently exist in the pricing structure of telecommunication services and provide clear signals based on economic costs to potential entrants. Thus, promoting the goal of efficient competition is made possible through geographic deaveraging.

However, promoting the goal of efficient competition cannot be fully realized until retail prices for local telephone service are also deaveraged. This is because failing to do so will distort the margins available to new and potential entrants. The likely result will be too much entry (relative to an economically efficient level) in the low cost (high density) markets and too little entry (relative to an economically efficient level) in the high cost (low density) markets. Unfortunately, this is exactly the outcome that policy makers are trying to avoid through geographic deaveraging. Therefore, deaveraging both retail and wholesale prices at the same time will lead to the highest likelihood of accomplishing the goal of this policy, while at the same time saving on the administrative and adjustment costs that often result from policy changes.[13]

As long as universal local telephone service is funded by implicit subsidies in the retail rate, a trade-off will exist between promoting efficient

[13] Synchronizing the geographic unit used for wholesale and retail rate deaveraging is also important. As suggested by Sandra Adams of the Iowa Utilities Board, many of the same problems deaveraging is attempting to correct will persist if the wholesale rates are deaveraged at a geographic unit smaller than the retail rates.

competition and promoting universal service. Since geographic deaveraging is designed to promote efficient competition, this report attempts to offer long-run deaveraging guidelines likely to promote that objective. In practice, however, state commissions may need to consider the appropriate balance between promoting universal service and promoting efficient competition within their state. One suggestion that has been made is to deaverage retail rates along with wholesale rates and fund universal service through explicit lump-sum fees not related to the price of local telephone service.

MEETING THE DEADLINE

The suggestions offered in the previous section of this report would allow for accomplishing fair, rational geographic deaveraging. But many if not most states will find it difficult to accomplish the complex deliberations required to do a complete job of geographic deaveraging before the May 1, 2000, deadline imposed by the FCC. A number of states were early adopters of forms of geographic deaveraging. Other states can look to them for examples of how to proceed in the short run. Pending detailed cost studies and dovetailing universal service funding changes with carrier to carrier wholesale prices, some of the options are:

- **Where they exist, use existing zones for local service rates in establishing geographic zones for deaveraging of unbundled network elements, as permitted by the FCC.**
- **Use density alone to establish the three zones.**
- **Divide the state by large cities, smaller cities, and a third zone for the rest.**
- **If all cities are about the same size, divide the state by cities and rural areas and then split the rural areas at a midpoint of density.**

- **Set a base rate at a wire center level and a statewide rate for two or more concentric zones surrounding the base.**
- **Deaverage loop rates only; do not try to deaverage other unbundled network elements yet.**
- **Make deaveraged rates interim, with permanent rates to be set pending detailed cost studies.**
- **Keep the differences in UNE rates for geographic zones small.**
- **Request a waiver of the May 1 deadline.**

The NRRI conducted a survey of all 51 regulatory jurisdictions in the winter of 1999 to determine, among other things, progress toward deaveraging of rates for UNEs into three or more zones. At that time, 18 states responded that they had adopted geographic deaveraging for at least one major telephone company. Of those, all but one reported that it had adopted the minimum three zones. In preparation of this report, the NRRI again contacted those states which said in 1999 they had already accomplished geographic deaveraging. Since the NRRI's survey was not exhaustive, there may be states that have taken significant action on geographic deaveraging that we did not contact.

At least one state got an early start on fully weaving together the opposing objectives inherent in promoting universal service and rate deaveraging. Since passage of the Wyoming Telecommunications Act of 1995, Wyoming has unbundled, deaveraged and rebalanced wholesale and retail rates of both U S West and a majority of the independent rural telephone companies operating in the state. In doing so, a set of rules addressing the costing and pricing of essential local exchange services offered to retail customers, the costing and pricing of wholesale UNEs purchased by competing carriers, and the provisioning and targeting of state universal support has been

developed. For states at the beginning of this process, it may prove to be useful to consult the rules developed in Wyoming.[14]

Several states have deaveraged UNE rates geographically using existing zones for local service rates. In Arkansas the three zones apply in the Statement of Generally Available Terms and Conditions (SGAT), the negotiated agreements between SBC and AT&T and an arbitrated agreement between SBC and ALLTEL. Similarly, Delaware used retail rates based on density zones to calculate UNE prices. Because of its small size, Delaware does not plan to introduce large disparities in rates. Maryland established interim rates for four density zones, with modifications expected when cost studies have been completed. The density zones correspond to existing residential local usage rate groups.[15] In Missouri, staff looked at both density and distance in recommending four rate zones based on retail rate groups, which are themselves based on samples of loop lengths. In Illinois, deaveraging based on retail rates began in 1983 with Ameritech's rate case at divestiture. Downtown Chicago comprises one zone; the remainder of Chicago and a couple of suburbs, the second; and the rest of the state, the third. The current zones may be reexamined in the context of evaluation of Ameritech's alternative regulation plan this year.

The decision on geographic deaveraging by the Virginia Corporation Commission provides another example of a fairly simple way to meet the upcoming federal requirement.[16] The commission set forward-looking UNE prices for Bell Atlantic in a 1999 decision and accomplished geographic deaveraging by looking at a graph showing the relationship of cost to density by wire center and choosing a demarcation point between low cost and high cost

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[14] Sections 500 through 559 of the Wyoming rules can be found on the Wyoming Secretary of States web site at http://soswy.state.wy.us/cgi-win/SSCGI_2.exe.

[15] Case 8731, Order 73010, November 8, 1996, and Case 8731, Phase II, Order 73707, September 22, 1997.

[16] PUC 970005, April 15, 1999.

areas. The graph showed flat costs for 77 percent of the wire centers in the state and a sharp rise in costs thereafter. The low cost areas became the first zone. The commission divided the other 23 percent of the wire centers in half to make the second and third wholesale price zones.

Kansas provides an example of a commission that has struggled with the relationship of universal service funding and geographic deaveraging. In a UNE-costing docket for Southwestern Bell, the Kansas Corporation Commission established three zone rates that apply to loops, subloops, minutes-of-use, switching, common transport, dedicated transport, and directory listings.[17] But the commission on reconsideration deferred action pending the outcome of the Kansas universal service funding costing process for Southwestern Bell and a determination on the definition of zones and subzones in that proceeding. The Commission did require the company to file a list of exchanges by zone.

Another approach to setting zones for geographic deaveraging is to explicitly model the costs of local telephone service using an econometric or engineering model, and set rates based on these estimates. This approach was used in New Hampshire. Using the Telecom Economic Cost Model developed by Ben Johnson Associates, Inc., cost estimates that controlled for demographic features specific to New Hampshire were produced for areas smaller than the wire center level. This approach has two important advantages. First, it accurately accounts for the amount of wire in the loop. Second, it produces cost estimates for a reasonably small geographic unit. Although this approach is a bit more complex than approaches used in other states, it is likely to result in more accurate cost estimates to establish geographic zones for deaveraging.

One of the most interesting examples to date of setting zones for wholesale rates was provided by the Colorado Public Service Commission.[18] In

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[17] Application of Sprint, United for commission to Open a Generic Proceeding on SBC rates for Interconnection, Unbundled Elements, Transport and Termination, and Resale, Order in Docket 97 - SCCC-149-GIT, September 17, 1999.

[18] Colorado Public Service Commission, *Investigation and Suspension of Tariff*

(continued...)

this approach, each wire center in the state has a base rate and three concentric zones. The area to which the base rate applies varies by the density of the wire center. Every base rate area in the state has the same UNE price. For each wire center, distance and density are used to establish three concentric zones. This is the same approach the commission used to deaverage end user rates. This plan takes into consideration both population density and the distance from the central office when setting wholesale prices. Thus, these prices are more likely to reflect their underlying economic costs.

An explicit two step process to deaveraging is being implemented in Florida and was under consideration in Minnesota at the time of this writing. Under a generic docket open on UNE pricing, the Florida Public Service Commission established interim deaveraged UNE loop rates for three major companies – BellSouth, GTE and Sprint.[19] The companies and many major CLECs stipulated to the interim rates. The Commission used wire center costs developed under a cost proxy model that was developed earlier for the purposes of universal service funding. The companies are filing new, detailed cost studies shortly. The interim deaveraged rates will stay in effect until the earlier of (1) establishment of permanent rates or (2) June 2001. In Minnesota, the staff of the Public Utilities Commission recommended some form of interim plan with a long-term plan implemented when a universal service fund has been established.[20] The staff briefing paper provides an excellent explanation of the issues involved in deciding policies on wholesale deaveraging. The issues

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[18] (...continued)
Sheets Filed by U S West Communications with Advice Letter 2617, Regarding Tariffs for Interconnection, Local Termination, Unbundling and Resale of Services. Decision C97-739, Docket 96A-331T, Commission Order, July 16, 1997, pp. 41-9.

[19] Docket 990649.

[20] Minnesota Public Utilities Commission, "In What Manner Should the Commission Meet the FCC's UNE Deaveraging Requirements?" Docket No. P-999/CI-99-465, Staff Briefing Paper, April 18, 2000.

addressed include timing of implementation, statewide uniformity versus local design, the basic unit of deaveraging, zone definition, and the number of zones.

Of course, if a state is unable to adopt any method of geographic deaveraging in time for the FCC deadline, a request for a waiver may be necessary. The California Public Utilities Commission, for example, is discussing the possibility of a formal request for a waiver to allow the Commission more time to formulate a sound approach to the FCC requirement. The Public Utilities Commission of Ohio April 6 requested a waiver of the May 1 deadline.[21] The PUCO has established deaveraged UNEs for Ameritech Ohio and Cincinnati Bell Telephone. The Commission said in its waiver petition that those proceedings took significant resources and time to complete and noted that the FCC allows a waiver request to seek relief from the general rule in light of particular facts and circumstances.[22] In requesting additional time to complete proceedings on GTE and Sprint-United, the Commission said, "Each carrier presents a special set of circumstances that require a detailed analysis." The proceedings on proposed total element long-run incremental costs for Ameritech addressed, among other things, said the Commission, methodological issues concerning economic lives of plant, the cost of capital, annual charge factors, utilization factors, joint and common costs, non-volume sensitive costs, telephone plant indices, and labor rates.

FINAL THOUGHTS ABOUT GEOGRAPHIC DEAVERAGING

A large degree of variation in the cost of providing local telephone service exists in the United States. However, this variation continues to be

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[21] Public Utilities Commission of Ohio, Petition for Waiver, *In the Matter of Federal-State Joint Board on Universal Service Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket 96-45 and CC Docket 96-98.*

[22] FCC, *In the Matter of Implementation of the Local Competition Provision in the Telecommunications Act of 1996,* CC Docket 96-98, August 28, 1999, paragraph 7.

masked by the averaging that was established during a time period when the telecommunications industry consisted of regulated monopoly firms. Promoting efficient competition in today's telecommunications industry, therefore, relies upon the removal of the subsidies that exist in the pricing structure of telecommunications services.

Geographic deaveraging is one way to accomplish this important objective. By establishing rate zones that reflect the actual economic cost of local telephone service, clear and accurate signals can be provided to potential entrants. Ideally, the end result will be a competitive telecommunications industry that has witnessed an efficient amount and mixture (that is, facilities-based and non facilities-based) of competitive entry.

However, this end result will only be possible if the price-cost signals that result from geographic deaveraging are accurate. It is clear that ultimately more than three zones, based on more than just population density, will be needed in most (if not all) states for geographic deaveraging to work as planned. In addition, a strong argument can be made in support of deaveraging both retail and wholesale prices together. Implementing geographic deaveraging correctly at the outset is an important first step to providing a framework that promotes efficient competition in today's telecommunications industry.