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U S WEST

November 4, 1998

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Ms. Magalie Roman Salas, Secretary
Federal Communications Commission
1919 M Street N.W., Room 222
Washington, D.C. 20554

RE: Network Unbundling and Lata Relief
CC Docket 98-147

Dear Ms. Salas:

On November 3, 1998, Michael Rouleau, Kathleen Abernathy, Mark Schmidt, Mary LaFave and the undersigned, representing U S WEST, met with Greg Cook, Alan Thomas, Jonathan Askin and Daniel Shipman, of the Federal Communications Commission. The purpose of the meeting was to discuss network unbundling and lata boundary relief. The attached handouts were used during the presentation.

In accordance with Commission Rule 1.1206(a)(2), the original and one copy of this presentation is being filed with you for inclusion in the public record. Acknowledgment and date of receipt are requested. A copy of this transmittal letter is provided for this purpose. Please contact me if you have questions.

Sincerely,

Kenneth T. Cartmell

Attachments

CC: Greg Cook
Alan Thomas
Jonathan Askin
Daniel Shipman

No. of Copies rec'd 0+1
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U S WEST – FCC EX PARTE PRESENTATION
NOVEMBER 3, 1998

ECONOMIC IMPLICATIONS OF UNBUNDLING ADVANCED SERVICES

On August 7, the FCC announced its intention to expand the list of "network elements" that incumbent LECs must unbundle and provide to competitors at cost-based rates pursuant to Section 251(c)(3) of the 1996 Act. As the Commission noted, the purpose of Section 251(c) is "to open local telecommunications markets to competition by reducing inherent economic and operational advantages possessed by incumbents."[1] In its August order, the Commission indicated that it will require incumbent LECs to unbundle "the facilities and equipment"[2] they may deploy to provide "advanced services," i.e., "wireline, broadband telecommunications services."[3] The digital subscriber line (xDSL) services now being deployed by many LECs appear to be the ones of most immediate interest.[4]

The Commission has asked for comments on a range of new unbundling requirements,[5] including the possibility of requiring LECs to unbundle the "spectrum" within existing local loops. Spectrum unbundling would permit competitors to buy virtual channels within existing loops.[6] Competitors might then, for example, opt to provide only the advanced data services, but leave it to the incumbent LEC to continue providing basic voice service over the same loop.[7] The transmission capacity of a single telephone wire could thus end up occupied by two or more providers of service to the same home. In addition, or alternatively, the Commission might require LECs to

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[1] Deployment of Wireline Services Offering Advanced Telecommunications Capability, Memorandum Opinion and Order, and Notice Of Proposed Rulemaking ¶ 21, CC Dkt. No. 98-147 (released Aug. 7, 1998) ("Advanced Services Order").

[2] Id. ¶ 11.

[3] Id. ¶3.

[4] Digital subscriber line dramatically expands the capacity of the existing copper loop by replacing analog modems with new digital adapters that use much more of copper's potential bandwidth. DSL modems on each end of a twisted-pair telephone line divide the line into three channels – a high-speed downstream channel, a medium-speed upstream channel, and a POTS channel. The POTS channel is split off from the digital modem by filters, enabling the channels carrying data traffic to be diverted around the central office switch and onto separate packet-switched networks, and guaranteeing uninterrupted POTS even if DSL fails.

[5] The Commission has asked for comment "on the specific unbundling requirements we should impose on network elements used by incumbent LECs in the provision of advanced services." Id. ¶ 15.

[6] The Commission has asked "whether two different service providers should be allowed to offer services over the same loop, with each provider utilizing different frequencies to transport voice or data over that loop." Id. ¶ 162.

[7] The Commission has noted that "[a] competitive LEC may want to provide only high-speed data service, without voice service, over an unbundled loop." Id.

unbundle the equipment – modems, multiplexers, packet switches, routers, and so forth – used to create and control these new transmission channels.

Unbundling DSL-Qualified Local Loops

Incumbent LECs are already required to provide competitors with access to the same loops used by the LECs themselves.[8] Not all existing loops are suitable for advanced services like xDSL, however. Some loops are too noisy, others too long, still others have loading coils or other characteristics that make them unsuitable for use with the electronic equipment used to provide high bandwidth service over copper lines. With the advent of DSL electronics, in other words, it is no longer sufficient to treat all "loops" as a single "network element." Loops vary in their suitability for providing advanced services, and LECs have developed various services and qualification procedures to categorize, qualify, and grade them.

Until the Commission concludes that competition provides adequate substitutes for loops themselves, it is therefore economically reasonable, and consistent with the spirit and letter of section 251, for the Commission to define new UNEs to reflect these underlying facts. If LECs themselves test, grade, or categorize loops in connection with the provision of their own advanced services, LECs may reasonably be required to provide the same testing, grading, or categorizing to competitors, on an unbundled, non-discriminatory basis. Consistent with other regulatory requirements,[9] incumbent LECs are publishing Technical Service Descriptions that describe the loop qualification process in detail, and are working through industry forums to develop uniform technical standards for advanced services.[10]

The Commission's new unbundling order may, in other words, reasonably extend the logic of Part 68 of the Commission's rules to the central-office end of the unbundled loop. Part 68 already assures competitors an equal opportunity to compete at the customer-premises end of the loop. The Part 68 standards are based on fixed aspects of the local loop – voltage, power, physical interfaces and so forth. Section 68.110 further requires a LEC to furnish competitors with full access to any "[t]echnical information concerning interface parameters not specified in [Part 68]."[11] And the LEC must limit changes in its "communications facilities, equipment, operations or procedures," to situations "where such action is reasonably required in the operation of its business and not

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[8]Incumbent LECs are not, however, required to improve their networks at the request of potential competitors. See Iowa Utilities Board v FCC, 120 F.3d 753,813 (8th Cir. 1998) ("subsection 251(c)(3) requires unbundled access only to an incumbent LEC's existing network — not to a yet unbuilt superior one.").

[9]E.g., Computer III contains network disclosure rules that are designed to provide enhanced service providers with access to the technical information that they need about Bell companies' networks. See Third Computer Inquiry, Report and Order, 104 FCC 2d 958, 🕮🕮 246-254 (1986).

[10]The national T1E1.4 standards body is working to adopt national standards that address various issues pertaining to loop spectrum management.

[11]47 C.F.R. § 68.110(a).

inconsistent with the rules and regulations in [Part 68]";[12] and must make available any "technical information concerning wiring on the customer side of the demarcation point."[13]

With assured rights to loops capable of providing advanced services, and the right to collocate and to attach their own electronics to incumbent LECs' unbundled loops, CLECs will be in precisely the same competitive position as incumbents in the contest to provide high-speed digital services over existing loops.

CPE and Inside Wiring

Significantly, both the Commission and the States have refrained from extending unbundling mandates into the domain of inside wiring or customer premises equipment. Incumbent LECs are permitted to provide both CPE[14] and inside wiring[15] on an integrated basis, and many still do. But neither CPE nor inside wiring are categorized as UNEs by either state or federal regulators. To the contrary, the Commission affirmatively prohibits LECs from tariffing CPE[16] and "complex" inside wiring[17] at the federal or state level.

That policy is grounded on sound economic logic. Markets for CPE and inside-wiring are competitive. With the key interfaces open to all – i.e., with the loop itself unbundled at the customer end – LECs are in no better position to provide inside wiring and CPE than their competitors. The Commission has correctly recognized that to extend unbundling and tariffing mandates into the competitive arena of the marketplace would not enhance competition, it would suppress it.

Local and Long-Distance Service

In 1996, long-distance carriers proposed, in effect, a "time share" of the loop. Long-distance carriers sought "to purchase a loop element solely for the purposes of providing interexchange service";[18] the LEC would remain the "owner" of the loop when it was used to place local calls rather than long-distance ones. The loop's spectrum, in other words, would be subdivided in the temporal domain, call by call.

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[12] Id. § 68.110(b).

[13] Id. § 68.110(c).

[14] See Furnishing of Customer Premises Equipment by the Bell Operating Telephone Companies and the Independent Telephone Companies, 2 FCC Rcd 143 (1987), on recon., 3 FCC Rcd 22 (1987), aff'd Illinois Bell Telephone Co. v. FCC, 883 F.2d 104 (D.C. Cir. 1989).

[15] Review of §§ 68.104 and 68.123 of the Commission's Rules Concerning Connection of Simple Inside Wiring to the Telephone Network and Petition for Modification of § 68.213 of the Commission's Rules, filed by the Electronic Industries Association, 5 FCC Rcd 4686 (1990).

[16] Amendment of §64.702 of the Commission's Rules and Regulations, 77 FCC2d 384, 388 (1980).

[17] See Detariffing the Installation and Maintenance of Inside Wiring, Memorandum Opinion And Order, 1 FCC Rcd 1190 (1986). Complex wiring includes all wiring installations involving five or more access lines. See 47 C.F.R. § 68.213.

[18] Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, First Report and Order, 11 FCC Rcd 15499, 🕮 385, (1996).

The Commission correctly refused to require unbundling at that level. A loop element should not be defined "in functional terms, rather than in terms of the facility itself,"[19] the Commission concluded. The Commission wanted local competitors to retain "maximum flexibility to offer new services," and that required giving such competitors "exclusive control over network facilities dedicated to particular end users."[20] The Commission concluded, in short, that what might be called "time-division" unbundling proposed by the long-distance carriers would suppress competition, not promote it.

The right approach, the Commission concluded was to extend unbundling no further than the loop itself. Long-distance carriers could purchase unbundled loops like any other competitor, just not on a time-share basis, with the incumbent LEC left as a co-tenant responsible for whatever services the long-distance carrier declined to supply.

Efficiency Considerations

The costs of operating and maintaining the local loop are fixed – they do not vary with usage.[21] Economic efficiency and consumer welfare are maximized when high fixed-cost assets are used to the maximum extent practical. It is inefficient for airplanes to fly with empty seats, or for hotels to have empty beds. It is likewise inefficient for local loops to sit idle most of the day. Some capacity may not be used because there is insufficient demand to cover even the low marginal cost of additional usage. But often, capacity is underused because of the inherent difficulties in matching supply and demand – that is, in finding an economic package that will reconcile the public objective of maximum usage with the private objectives of maximizing consumer utility and provider profit.

Other owner-operators of high-cost fixed assets, like airline and hotel companies, spend enormous amounts of effort on "yield management." In brief, this effort is devoted to discovering new schemes for pricing and packaging services in profit-maximizing ways.[22] Their customers contrive on their end to position themselves as the marginal consumer, the one who gains access to the fixed-asset resource at the lowest possible price – i.e., the price closest to the marginal cost, and furthest below the average cost.

All of this calculation is socially useful – it aims to solve the very refractory economic problem of how best to price access to a high-fixed-cost asset. The critical

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[19]Id.

[20]Id.

[21]See Jurisdictional Separations Reform and Referral to the Federal-State Joint Board, Notice of Proposed Rulemaking, 12 FCC Rcd 22120, 22159 (1997) ("Residential loop costs . . . generally are fixed with respect to traffic on individual loops . . . .").

[22]See generally Testimony of Ben Hirst, Senior Vice President of Corporate Affairs, Northwest Airlines, Before Hearing of the Antitrust, Business Rights and Competition Subcommittee of the Senate Judiciary Committee Subject Airline Hubs and Fair Competition, Apr. 1, 1998 (discussing use of yield management systems in airline industry); W. Lieberman, Debunking the Myths of Yield Management, Cornell Hotel and Restaurant Administration Quarterly, Vol. 34, No. 1 (February 1993), at 34-41.

point, however, and one the Commission has already acknowledged, is that this market-clearing process can occur only when the fixed-cost-asset remains within the integrated economic control of a single producer. If United Airlines, for example, were required to set aside some fraction of discount seats on each flight for resellers, at prices prescribed by federal regulators, yield maximization on those flights would be severely undermined. Load factors would immediately decline.

A CLEC that buys the entire loop can certainly do the same as an airline company in terms of promoting the efficient, high-load use of that loop. So can the incumbent LEC, to the extent that it retains control over the loop's entire capacity. But subdividing the individual loop among multiple providers will inevitably subvert the market forces that maximize load. The Commission has already recognized as much in responding to requests for a time-share "long-distance loop UNE." It is only by leaving the loop under a single operator's control that the Commission can preserve the market forces that will maximize the traffic on the loop, and minimize the traffic-normalized cost of using it.

Every new subdivision of the loop itself creates a new opportunity for regulatory mispricing of one of the new components thus created. Any mispricing of any element will undermine the efficient usage of the entire wire. Each unbundled channel, band, or bitstream will require a separate, prescribed price. Channels priced too low will be overused, channels priced too high will be underused, and the net effect will be higher prices, not lower, for the things the Commission most wants to keep cheap – basic voice service, access charges, and so forth.

Efficiency will be undermined by the very process of defining and nominally separating the separate channels. Once that separation occurs, and a second provider comes to occupy any one of the channels, LECs themselves will be disabled thereafter from redefining or recombining them into more efficient alternatives that new technology may later make possible.

Promoting the most efficient possible use of loops on a going-forward basis is especially important because so many historical aspects of loop pricing remain highly inefficient. Local residential phone is a solvent business today largely because certain above-cost services are bundled in with below-cost voice. Incumbent LECs sell initial basic packages of service, then add various types of enhancements on top. For most residential customers, monthly subscription rates remain substantially below the true cost of providing loop and dial tone. The most expensive component of providing local service is the local loop, which represents approximately 50 percent of network costs.[23] As the Commission has noted in the past, low rates for basic residential service are maintained "through, among other things, a combination of: geographic rate averaging, high rates for business customers, high interstate access rates, high rates for intrastate toll

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[23]See N. Lipps, The Telecom Act of 1996: Only the Best Intentions, Data Communications, July 1996, at 25 ("RBOCs invest between $14 billion and $20 billion a year to update their network infrastructures. Nearly 50 percent of this investment goes to maintenance, new equipment, or upgrades to the local loop.").

service, and high rates for vertical features and services such as call waiting and call forwarding."[24]

As the Commission recognizes, the true cost of providing local residential service is already loaded on to vertical services and features. The larger the volume of those services, the smaller the economic efficiency that results from this mispricing. Unbundling the channels used to provide vertical services from those used to provide basic ones has precisely the opposite effect. With unbundling of this kind in place, competitors will vie to provide only higher value services on parts of the spectrum, while leaving incumbents to provide the low value, unprofitable voice.

Implications of the Emerging Market for Bundled Services

As the Commission and its Chairman have recognized elsewhere, new technology now makes possible great new efficiencies in the provision and marketing of bundled telecom services. The market is already responding. "(A)s competition increases and more telecommunications carriers enter each other's markets, carriers are increasingly bundling packages of telecommunications services."[25] Consumers are coming "to expect and demand bundled product offerings."[26] The Commission recognizes that "bundled" telecommunications services, "may, in the future, become a distinct and relevant product market."[27] The emergence of this new market for bundled services was "[p]art of Congress's vision" in passing the 1996 Act.[28] Consumers "value the simplicity of one-stop shopping."[29] In passing the 1996 Act, Congress intended to permit consumers to "deal with one phone company, one phone bill, and one customer service representative – all priced competitively."

Carriers have already begun to provide bundled telecommunications on a wide scale, generally by adding new services to their existing base. AT&T has added local toll services to its traditional long-distance offerings in many states.[30] If its merger with TCI is approved, AT&T plans to combine its current consumer long-distance, wireless and Internet services units with TCI's cable, telecommunications, and high-speed Internet

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[24]Access Charge Reform, First Report and Order, 12 FCC Rcd 15,982, ¶11 (1997).

[25]Application of Motorola, Inc. Transferor, and American Mobile Satellite Corporation Transferee, For Consent to Transfer Control of Ardis Company, Memorandum Opinion And Order, 13 FCC Rcd 5182, 5192-93 (1998).

[26]Id.

[27]Applications of NYNEX Corporation and Bell Atlantic Corporation for Consent to Transfer Control of NYNEX Corporation and Its Subsidiaries, Memorandum Opinion and Order, 12 FCC Rcd 19985, ¶52 (1997).

[28]Statement of William E. Kennard, Chairman, FCC, on Section 271 of the Telecommunications Act of 1996, Before the Subcommittee on Communications of the Committee on Commerce, Science, and Transportation, United States Senate, March 25, 1998.

[29]Id.

[30]See AT&T, You Can Choose AT&T For Your Local Toll Calls http://www.att.com/localtoll/usmap.html.

businesses to create a new subsidiary – AT&T Consumer Services.[31] Sprint is moving to "a common Sprint identity for all our products and services, including local telephone service, complex data systems, everything."[32] MCI WorldCom is striving to define itself as "the single point-of-contact for . . . telecommunications needs."[33] GTE and Southern New England Telephone are already allowed to add bundled long-distance service to their residential offerings, and have been notably successful in doing so.

The incentives to bundle are particularly strong in the market for advanced data services. The Internet access market is the paradigmatic new market for bundled telecom service, because the service there consists of a package of local access, long-distance transport, and varying amounts of formatting, protocol conversion, and content. Carriers are increasingly offering advanced data services alongside their traditional voice. MCI WorldCom advertises itself as "a new era communications company providing customers around the world with a full set of data, Internet, local and international communications services."[34] AT&T offers Digital Long Distance Service, which "allows customers with local digital service the ability to use the full spectrum of digital capabilities when making long distance digital data calls."[35] Under AT&T's new service, customers receive a single bill for their traditional voice and digital data service.[36] Both Cox and Cablevision are bundling their cable services with Internet access and telephone service.[37] RCN, a CLEC on the east coast, offers a bundle of local and long distance phone service, Internet access, and cable TV service.[38]

The important point, however, is that a market for bundled services does not simply spring into existence wholly formed. Bundles evolve as their components are

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[31]See AT&T, TCI To Merge, Create New AT&T Consumer Services Unit, http://www.att.com/press/0698/980624.cha.html ("AT&T Consumer Services will provide the broadest set of consumer communications services – including local, long distance, wireless and international communications, cable television, dial-up and high-speed Internet access services – all under the AT&T brand name.").

[32]Gary D. Forsee, President and COO, Sprint Long Distance Division, The Power of Brand Image, remarks at the Forbes-Amex Innovative Strategies Conference, May 16, 1996.

[33]MFS Press Release, MFS Now Offering Local Telephone Services Over Its Own Fiber Networks in Hartford and Stamford, July 29, 1996.

[34]WorldCom, WorldCom Completes Merger with MCI, Sept. 14, 1998, http://www.wcom.com/about_worldcom/press_releases/current_release/.

[35]AT&T, AT&T Digital Long Distance Service Description and Features, http://www.att.com/home64/features.html.

[36]See id. ("AT&T Digital Long Distance Service calls appear in the AT&T portion of a Local Telephone Company bill"; "There are no sign up fees or monthly charges for AT&T Digital Long Distance. Customers pay only for minutes used"; "Current features and pricing for voice calls are not changed.").

[37]See Remarks by William E. Kennard Chairman Federal Communications Commission to National Cable Television Association, Atlanta, GA, May 5, 1998.

[38]See RCN, Bundling, **Error! Bookmark not defined.** ("Any two or more of these RCN products can be combined to reach higher discount levels. Customers can choose up to four services and enjoy incremental savings with each service added to their RCN account.").

gradually combined in different ways, in response to provider initiative and consumer demand. In a market in which multiple providers supply the different components, different providers will begin with different "anchor tenants" in the bundles they create. Long-distance carriers attempt to sell local and data services to their existing interexchange customers. Local voice carriers attempt to add data and long-distance services. Internet service providers attempt to add voice; video providers attempt to add data, and so forth. Each existing provider attempts to add the new services at the margin of its existing business, and will price them accordingly. That is the efficient, socially desirable economic approach.

But inevitably, this means that different providers will incur quite different marginal costs, and develop quite different pricing strategies, as they build upon existing operations to create new bundles of service. There is no economically correct or rational way to separate costs and prices in circumstances where average marginal costs are sharply different, and where the "marginal" versus the "infra-marginal" activity are distinguished only by the history of the market, not by its future. As Robert Pepper, the Chief of the FCC's Office of Plans and Policy, wrote in a prescient 1988 paper: "The questions of allocating costs and pricing service are difficult enough today, they will be many more times difficult in an integrated broadband environment when each customer is served by a gigabit or terabit optical pipe the use of which is dynamically reconfigured as the customer uses different services and facilities."[39]

These problems can be minimized if the Commission draws the line at unbundling network elements that are not yet supplied competitively. Extending unbundling mandates into competitive markets will only impede the development of new, efficient, markets for bundled services. If it is efficient to do so, competitors can even obtain loops, unbundle the spectrum within the loops themselves, and wholesale that spectrum competitively unbundled loop elements to other service providers. But we know of no CLEC that has considered doing that, and it seems unlikely that one will emerge. That fact alone is strong evidence that mandating unbundling at that level is economically inefficient.

Once the entire loop is unbundled, the justification for unbundling its component parts disappears. Former FCC Chief Economist Joseph Farrell has made the same point in connection with price regulation. The unbundling and price-regulation of UNEs at wholesale eliminates the rationale for regulating prices at retail.[40] Farrell likewise called for the "deregulation of innovation," specifically citing high-speed data services as an

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[39]Robert M. Pepper, OPP Working Paper No. 24, Through the Looking Glass: Integrated Broadband Networks, Regulatory Policies, and Institutional Change, 4 FCC Rcd 1306 (1988).

[40]See Joseph Farrell, Prospects for Deregulation in Telecommunications (rev. version May 30, 1997) ("If multiple providers can compete for a customer's business and promptly supply it at a reasonable overall cost, even if they do so by leasing the incumbent's facilities, then it would seem that prompt deregulation of all charges to the provider's end-user will be appropriate. If a carrier tries to charge too much overall to the end-user then another will undercut, and by hypothesis this can happen quickly. If a carrier tries to charge a reasonable amount overall but in an inefficient manner, then another carrier can offer a more profitable alternative pricing package that is also better for the end-user.").

example.[41] Innovative add-ons to the basic network should not themselves be subject to unbundling regulation, Farrell argued, so long as the core elements of the traditional monopoly network are. "[W]hen an incumbent creates a 'new' network element, perhaps the new one need not immediately be made available on regulated terms, provided the old one remains available to non-incumbents."[42]

Promoting Facilities-Based Competition

It makes no sense to build and deploy what you can buy more cheaply from others. Least of all, to build and deploy innovative new technology that is to be offered in an already competitive market, where there is a real risk that it will not turn out to be what customers want. For that reason, requiring incumbent LECs to "unbundle" and sell to their competitors every new capability and service they may add to their networks will create a strong disincentive to invest. On new, risky investment in facilities and services that turn out to be very popular, such regulation ensures that LECs can hope to recover (at best) no more than their actual costs. New, risky investments that fail, by contrast, will end up charged to Bell Company shareholders, through the vehicle of price-cap regulation. Regulation that works in such a manner will suppress risky new investment by LECs entirely.

CLECs themselves have said as much. Facilities-based CLECs like TCG acknowledge "a real and substantial risk that the development of facilities-based local competition can be adversely affected if wholesale or retail rates are priced inequitably relative to unbundled element costs, creating an uneconomic price squeeze. . . . [The FCC] must ensure that wholesale competition does not drive out or diminish the development of strong, facilities-based competition."[43] The CLECs who disagree are the ones who prefer regulatory arbitrage to building real networks. They are the ones who insist that the Commission should unbundle and price regulate everything, everywhere – new services no less than old, competitive services no less than uncompetitive ones, innovation no less than tried and true.

Competitive Media

In a rapidly growing number of markets, there are already competitive alternatives to the loop itself, at least for high-speed data transport. Incumbent LECs arguably remain dominant providers of some analog voice services, some medium-band digital services like ISDN, and some traditional higher-speed data services (like T-1 lines) to businesses. But incumbent LECs are not, by any stretch of the imagination, today's dominant providers of "digital and broadband services and facilities."[44] For residential and small-

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[41]Joseph Farrell, Competition, Innovation and Deregulation, Speech at Merrill Lynch Telecommunications CEO Conference, New York, March 19, 1997.

[42]Id.

[43]Comments of Teleport Communications Group at 57, Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, CC Dkt. No. 96-98 (FCC May 16, 1996).

[44]As the Commission itself noted, "incumbent wireline carriers and new entrants are at the early

business consumers, the main providers of such services today are cable companies and satellite carriers, along with various other, non-cable, wireline and wireless CLECs.

Over 11 million (10 percent) of all U.S. homes already have access to high-speed cable modem service. The Commission has noted that approximately 35 percent of all cable systems have been upgraded with hybrid-fiber coax (HFC) network architecture,[45] which is the principal upgrade needed to provide cable modem service.[46] Hughes Electronics offers high-speed Internet access via DBS satellite to all U.S. households (particularly residential and rural ones) and small businesses with a line of sight to the equatorial sky.

To the extent that incumbent LECs begin providing high-speed data services, they will almost certainly remain non-dominant and non-essential for the foreseeable future. Numerous competitors have ambitious plans to deploy digital broadband facilities. Cable operators are close to the halfway point in upgrading their networks to a digital HFC architecture that is capable of delivering telephone and other advanced information and two-way services,[47] and industry analysts project that over 60 percent of all cable systems will be cable-modem ready by the year 2000.[48] Soon thereafter, several broadband satellite networks are expected to be fully operational, including Teledesic, Skybridge, Cyberstar, and Astrolink. CLECs are also heavily engaged in deploying advanced technologies and introducing innovative new data services.

Cable modem and DBS providers do not require unbundled access or interconnection to the local telephone network at all in order to provide their high-speed data services – they each operate their own, completely independent networks and distribution facilities. Similarly, CLECs do not rely on incumbent LECs' facilities to serve many large business customers; CLECs serve those customers over their own competitive fiber-optic networks.

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stages of deploying xDSL and other advanced services. Thus, the incumbent does not currently enjoy the overwhelming market power that it possesses in the conventional circuit-switched voice telephony market." Id. 🕮 10.

[45] See Annual Assessment of the Status of Competition in the Market for the Deliver of Video Programming, Third Annual Report, 12 FCC Rcd 4358, 🕮172 (1997).

[46] See D. Shapiro, et al., Deutsche Morgan Grenfell Inc., Ind. Rpt. No. 1964154, Modems *3 (Aug. 27, 1997) (hybrid-fiber coax (HFC) rebuild or upgrade "is generally a precursor to deploying a two-way cable modem service, what is often overlooked is that several operators have been upgrading their networks diligently for the past three, four, and five years, and a great deal of this money has already been spent.").

[47] As early as 1995, Cox had upgraded almost 80 percent of its systems to hybrid fiber-coax. See F.W. Moran, Salomon Brothers, Investext Co. Rep. No. 1572392, Cox Communications, Inc., at 4 (June 27, 1995). Comcast President Brian Roberts said he expects to have 85 percent of the company's network upgraded to be able to provide video and interactive programming to subscribers' homes by the end of 1998. S. Hamm, Microsoft: Cash to Burn and It's Just the Start, ZDNet News (June 10, 1997).

[48] See Allied Business Intelligence Press Release, http://www.alliedworld.com/ (CATV98.pdf release).

Lessons Learned from Other Media

The Commission does not impose any unbundling requirements on the radios deployed by wireless licensees.[49] Cellular,[50] PCS,[51] and most new digital wireless technologies (e.g., IVDS[52] and WCS[53]) face no unbundling obligations of any kind. The Commission has also readily given broadcasters flexibility to add new channels – including channels used for common carriage – within the "subcarrier"[54] and vertical blanking interval (VBI)[55] portions of their spectrum, without offering access to those new channels to third parties.[56] This policy has of course been facilitated by the fact that most wireless markets are served by multiple, competing licensees. But in this context, at least, the Commission has nevertheless recognized – indeed emphasized – that efficiency requires giving licensees the flexibility to determine for themselves how best to use the scarce resource in question.[57]

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[49]Indeed, the Commission for a long time prevented radio licensees from slicing up their spectrum (into either geographic or frequency sub-bands) and allocating it for different uses. See, e.g., Revision of Radio Rules and Policy, 7 FCC Rcd at 2788, n.124 ("broadcast licensees must maintain control of their facilities"); 47 C.F.R. § 73.3555(a)(3)(ii). See also Public Notice, FCC 70-387 (April 20, 1970), 22 FCC2d 779 (1970) ("we have generally not allowed the transmission of ancillary telecommunications services within the video portion of broadcast television signals without prior Commission consent.").

[50]The Commission has permitted the digitization of existing cellular networks, see Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Second Annual Report, FCC 97-75 (Mar. 25, 1997) (CDMA/TDMA); Implementation of Sections 3(n) and 332 of the Communications Act, Third Report and Order, 9 FCC Rcd 7988, 8030-33 (1994) (CDPD), and has already removed restrictions on the types of services that cellular licensees may provide. See Amendment of the Commission's Rules to Permit Flexible Service Offerings in the Commercial Mobile Radio Services, First Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 8965 (1996).

[51] The PCS licenses issued by the FCC permit a wide range of services to be provided. See Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Second Report at 18, FCC 97-75 (Mar. 25, 1997) ("[b]roadband PCS licenses, for example, can be used for any mobile or fixed service.").

[52]See Amendment of Parts 0, 1, 2, and 95 of the Commission's Rules to Provide Interactive Video and Data Services, 7 FCC Rcd 4923 (1992),

[53]See Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service ("WCS"), GEN Dkt No. 96-228 (released Feb. 20, 1997).

[54]See FM Licenses, First Report and Order ¶ 54, BC Dkt No. 82-536 (released Apr. 7, 1983).

[55]See Amendment of Parts 2, 73, and 76 of the Commission's Rules to Authorize the Offering of Data Transmission Services on the Vertical Blanking Interval by TV Stations, 101 FCC2d 973 (1984).

[56]The Commission seems headed in the same regulatory direction with new rules that allow broadcast television licensees to transmit data within their main video signals. See Digital Data Transmission Within the Video Portion of Television Broadcast Station Transmissions, 11 FCC Rcd 7799 (1996).

[57]As described in a January 1997 paper by the FCC's deputy chief economist, "mandated use [of spectrum] in general may ultimately diminish the public welfare by preventing market forces from operating to yield the most valued services at efficient cost and competitive prices. We therefore believe that in most cases, the Commission can best promote the public interest by relying on competitive market forces, and by implementing allocation, assignment, usage, and other policies that permit market forces to operate most effectively." G. Rosston and J. Steinberg, Using Market-Based Spectrum Policy to Promote the Public Interest 7 (January 1997). The paper accordingly advocates spectrum flexibility – giving licensees the

A different approach has been adopted with cable, and the results have not been good. In sharp contrast to local phone companies, cable operators are not required to give competitors unbundled access to the cable itself; they are, instead, required to provide some channels to competing commercial and non-commercial programmers, as well as to over-the-air broadcasters.[58] As a result, cable capacity is often wasted: channels that have been set aside are left unoccupied. The "retransmission consent"[59] negotiations mandated by Congress have proved to be endlessly fractious.[60] The government required five years of litigation, including two trips to the Supreme Court, to uphold the "must-carry" rules against First Amendment attacks,[61] and additional First Amendment challenges seem inevitable in connection with the retransmission of digital signals.[62] There have been endless fights over responsibility for content, particularly pornographic content, delivered on leased channels.[63] There has been a great deal of customer confusion. Customers have not readily accepted that their cable operator is not wholly responsible for the technical quality and program content of what travels on its wires.[64]

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freedom "to determine how they will use spectrum, how much spectrum they need, and the geographic area in which they will provide service." Id. at 13.

[58]Cable operators are required to devote one third of their "activated channels" to carry local TV stations, see 47 U.S.C. § 524(b)(1)(B), and are required to set aside additional channels for commercial lease, see id. § 531, and "public access," see id. § 532. The Commission also is now considering whether to require cable operators to carry broadcasters' digital television signals. See Carriage of the Transmissions of Digital Television Broadcast Stations, Amendments to Part 76 of the Commission's Rules, Notice of Proposed Rulemaking, CS Docket No. 98-120 (released July 10, 1998); see also 47 U.S.C. § 534(b)(4)(B) (requiring the FCC to address the issues involved in mandatory carriage of a broadcaster's digital signal). As a recent paper by the FCC's Office of Plans and Policy explains, provisions of these sort "arguably represent a form of service 'unbundling.'" B. Esbin, Internet Over Cable: Defining the Future In Terms of the Past, OPP Working Paper Series 30, at 103 (August 1998).

[59]Under these rules, instead of forcing cable to carry their programming for free, a broadcaster may insist that cable not carry it at all absent a contractual agreement to pay for the signal. See 47 U.S.C. § 325(b)(1).

[60]In practice, broadcasters found that they need cable more than cable needs them. See generally Glen O. Robinson Commentary: The "New" Communications Act: A Second Opinion, 29 Conn. L. Rev. 289, 300 (Fall, 1996) (After the Commission's order implementing retransmission rules went into effect, however, the major cable system operators (most notably the multiple system operators like Time-Warner and TCI) announced that they would drop the stations rather than pay cash for retransmission consent. . .").

[61]See Turner Broadcasting Sys., Inc. v. FCC, 114 S. Ct. 2445 (1994); Turner Broadcasting System, Inc. v. FCC, 117 S. Ct. 1174 (1997).

[62]See Carriage of the Transmissions of Digital Television Broadcast Stations, Amendments to Part 76 of the Commission's Rules, Notice of Proposed Rulemaking, 🕮 15, CS Docket No. 98-120 (released July 10, 1998) ("We also realize, given the history of the must carry provisions and the litigation relating to them, that any rules adopted by the Commission must be carefully crafted to permit them to be sustained in the face of a constitutional challenge.").

[63]See, e.g., Goldstein v. Manhattan Cable Television, Inc., 916 F. Supp. 262 (S.D.N.Y. 1995); Media Ranch, Inc. v. Manhattan Cable Television, Inc., 757 F. Supp. 310 (S.D.N.Y. 1991); Media Ranch, Inc. v. Manhattan Cable Television, Inc., 1992 U.S. Dist. LEXIS 7326, No. 90 Civ. 7218, 1992 WL 116588 (S.D.N.Y. May 19, 1992) (mem.).

[64]Cable operators "may refuse to transmit any leased access program or portion of a leased access

Conclusion

As set forth above, spectrum unbundling will undermine basic principles of economic efficiency, impede carriers' incentives to provide bundled services, and frustrate the Commission's efforts to promote facilities-based competition. Spectrum unbundling will therefore frustrate Congress's goal to promote the deployment of advanced telecommunications capability to all Americans. The Commission should accordingly reject its proposal to require incumbent LECs to unbundle spectrum within their local loops.

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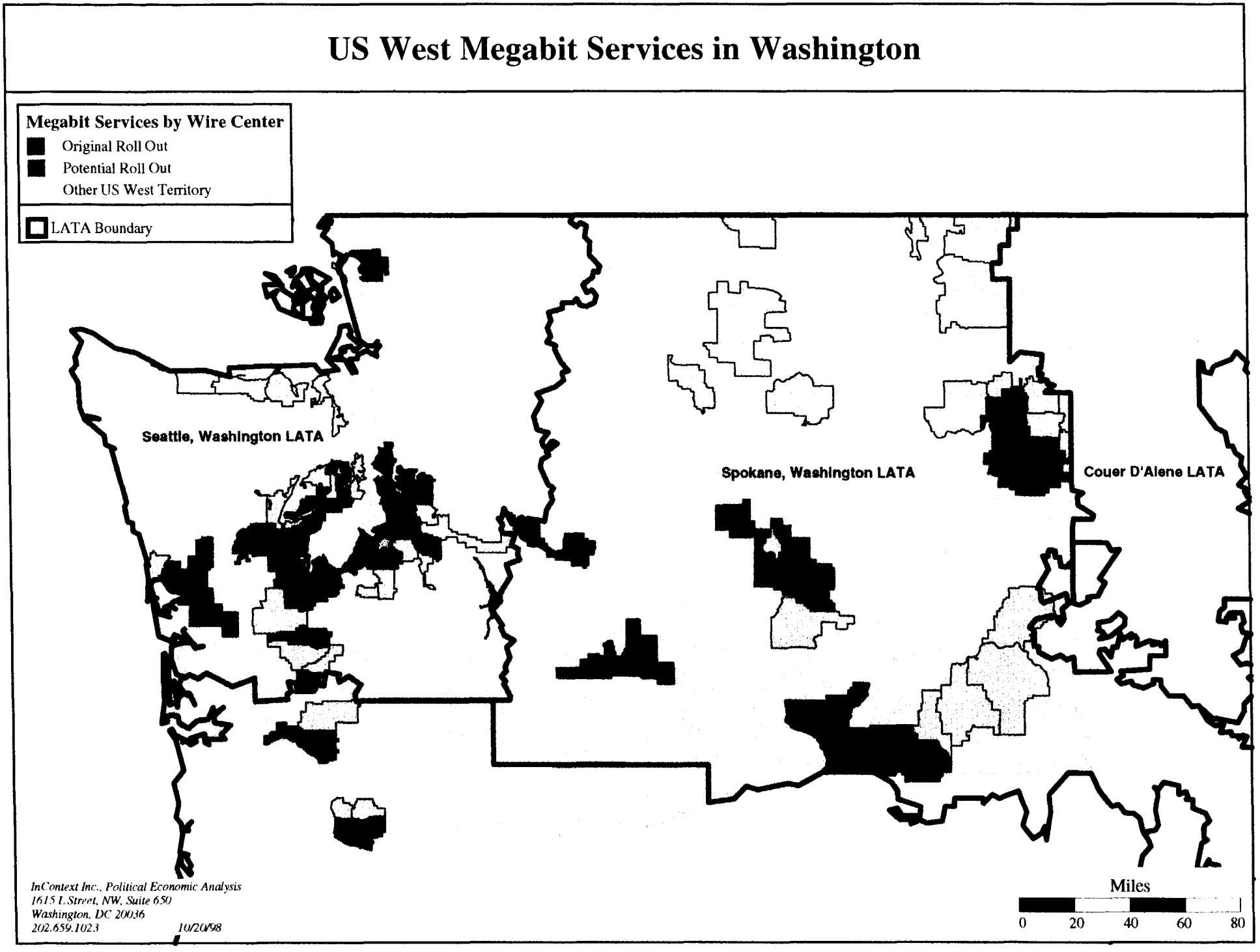
program which contains obscenity, indecency, or nudity and may consider such content to the minimum extent necessary to establish a reasonable price for the commercial use of designated channel capacity by an unaffiliated person." 47 U.S.C. § 532(c)(2).

US West Megabit Services in Washington



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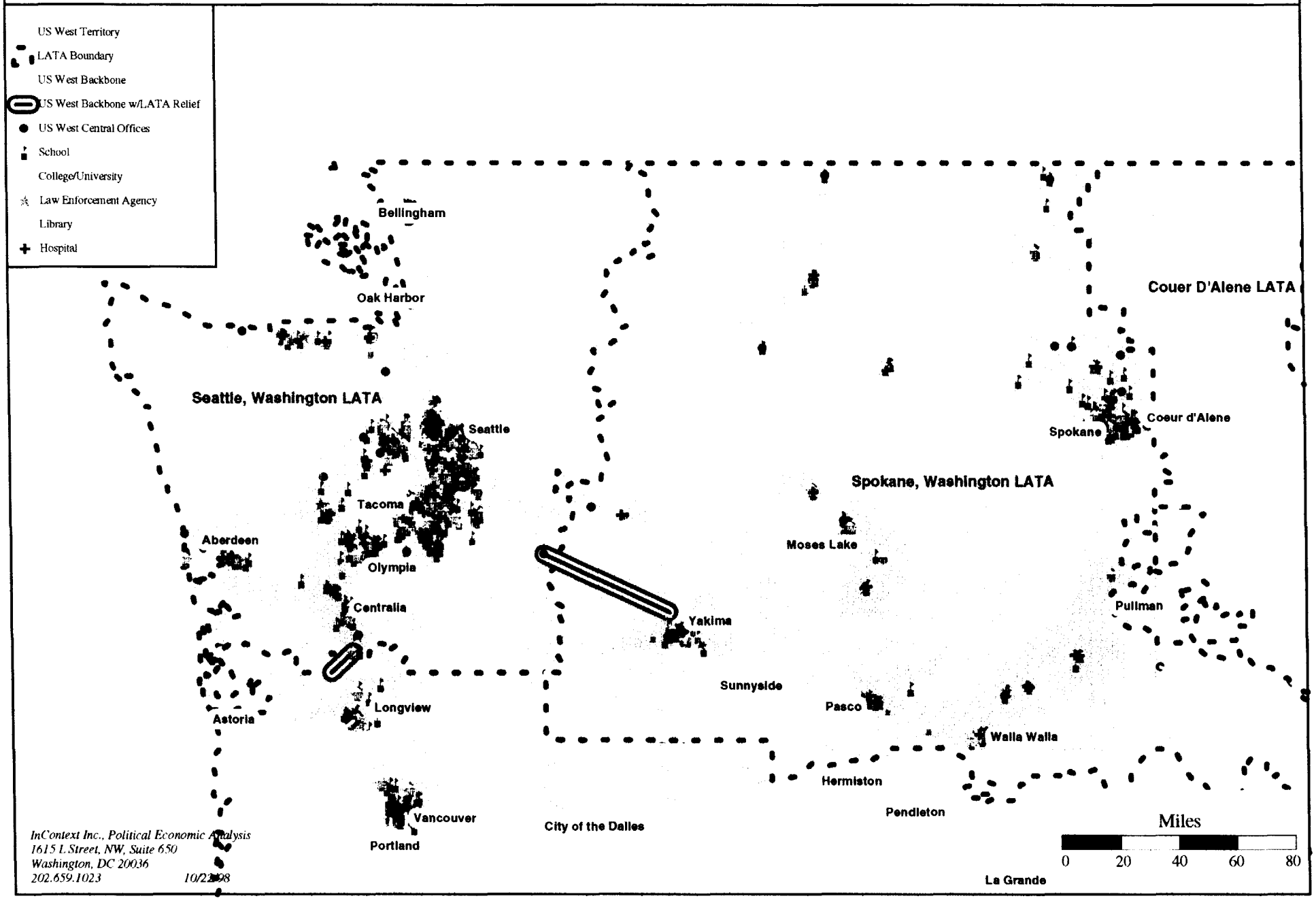
10/20/98

Who Could Get Advanced Telecommunications Services in Washington If LATA Walls Come Down



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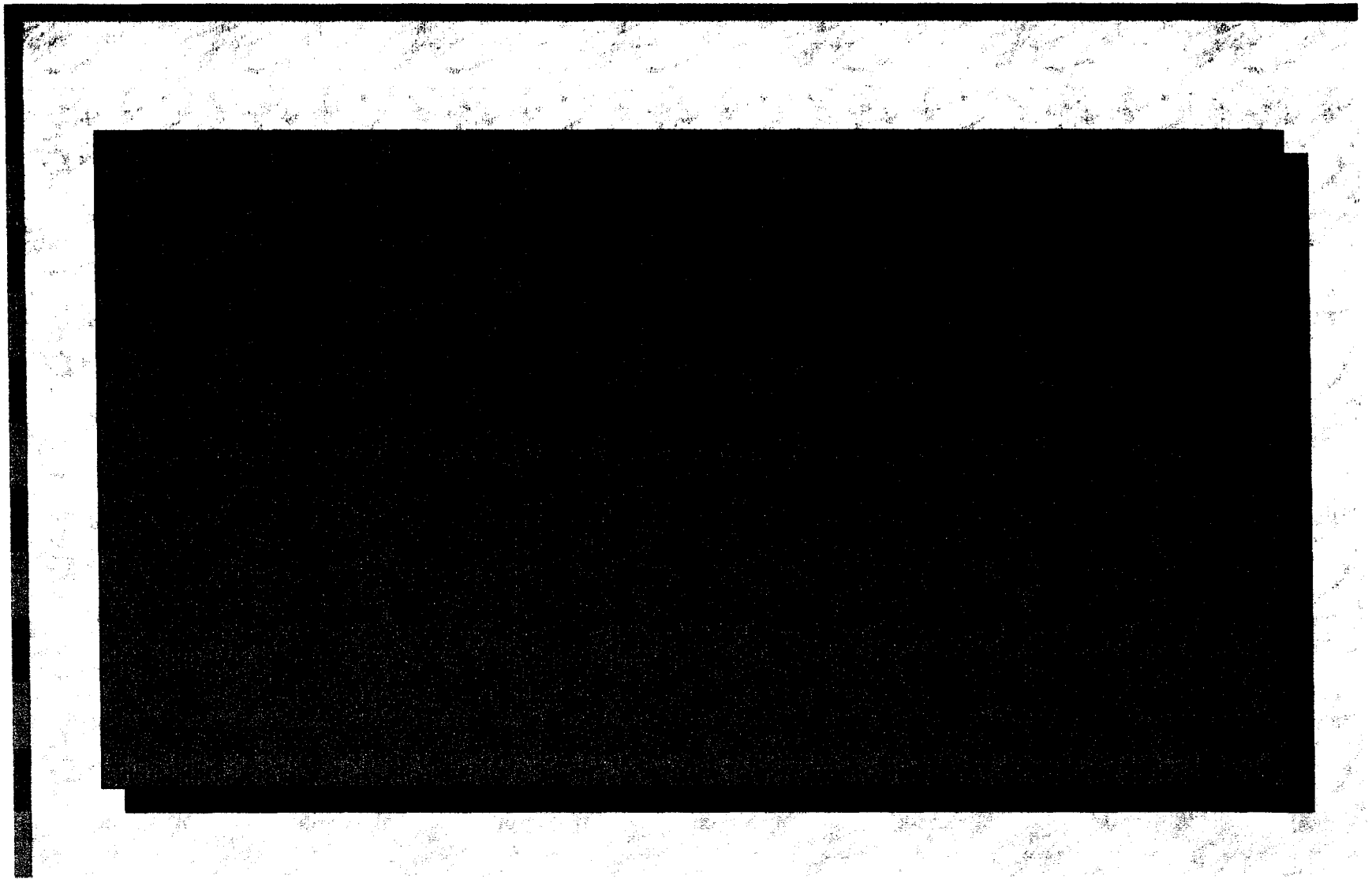
Cageless Physical Collocation



Cageless Physical Collocation Overview

- Physical Collocation Option
- Reduced Physical Space Requirement
- Price Advantage
- Opportunity for Improved Installation Intervals
- Can Be Implemented in Central Offices Where Large Areas for Caged Physical Collocation are Not Available

Cageless Physical Collocation Features & Benefits

- Physical Collocation Option
  - CLEC Has Physical Access to Its Equipment for the Provision and Maintenance of Services
  - CLEC Personnel Have 24 x 7 Access to the Central Office via Card Readers for Security
  - CLEC Equipment Terminations Appear on the Single Point of Termination ("SPOT") Intermediate Distribution Frame
  - SPOT Intermediate Distribution Frame is Where All Unbundled Network Elements ("UNEs") Appear

Cageless Physical Collocation Features & Benefits

- Reduced Physical Space Requirement
  - Caged Physical Collocation Minimum Size is 100 Square Feet
  - Cageless Physical Collocation Minimum Size is One Equipment Bay (Approximately 9 Square Feet)
  - Cageless Physical Collocation Includes the Number of Equipment Bays Needed by CLECs

Cageless Physical Collocation Features & Benefits

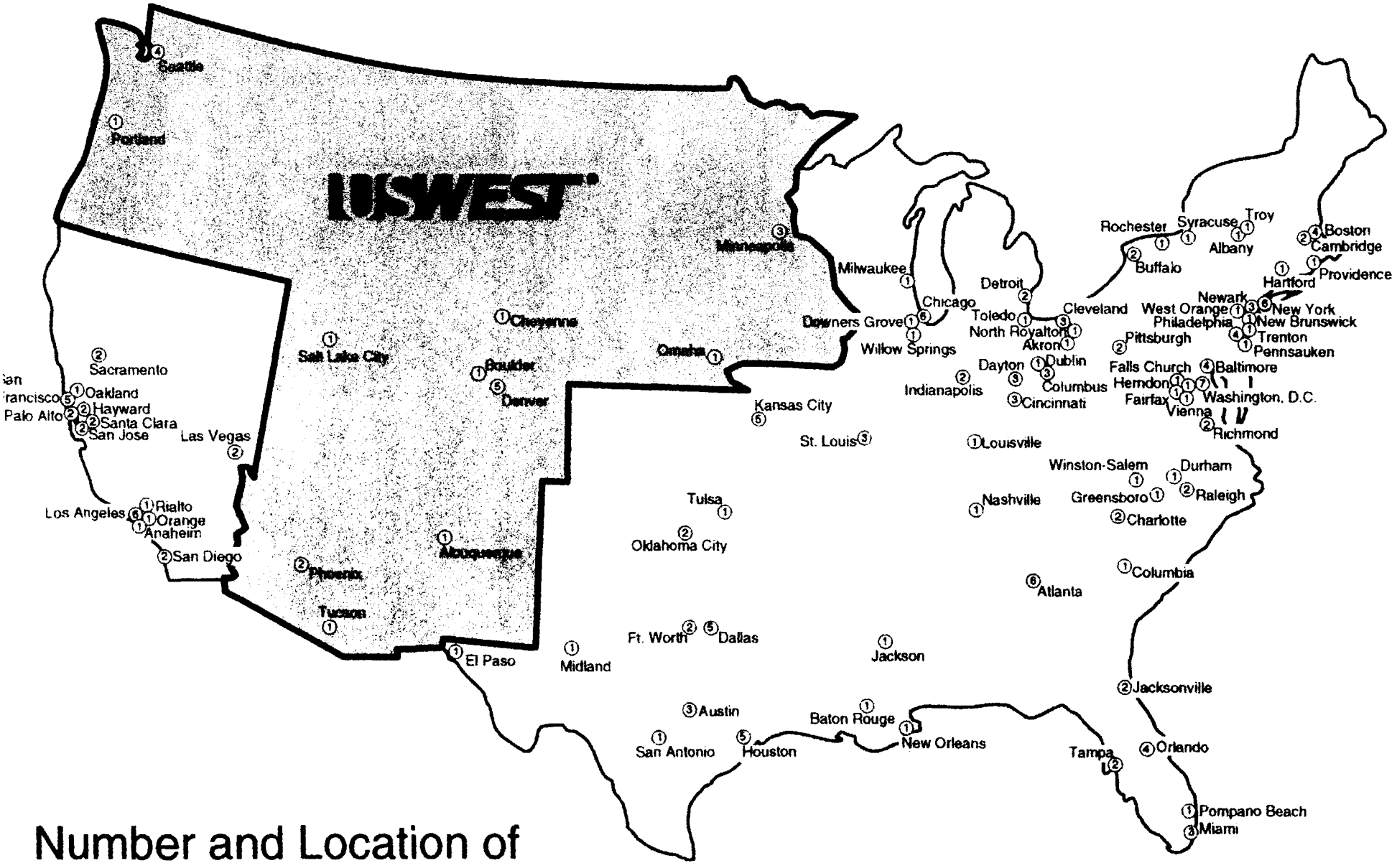
- Price Advantage
  - Collocation Cage Enclosure Not Required
  - Space is Allocated in Single Equipment Bay Increments
  - CLEC Orders Only the Physical Space Needed for Its Equipment

Cageless Physical Collocation Features & Benefits

- Opportunity for Improved Installation Intervals
  - Installation Intervals are Central Office Specific
  - Cage Construction Eliminated from Interval
  - U S WEST Has the Opportunity for Improved Installation Intervals Where . . .
    - Supporting Structure for CLEC Equipment Bays Exists to Meet NEBS Requirements
    - Overhead Cable Racking Exists for Power Cables and Circuit Terminations
    - Modifications to Existing U S WEST HVAC and BDFB for DC Power Installation Are Not Required

Cageless Physical Collocation Availability

- U S WEST Will Offer Cageless Physical Collocation Where the Minimum Physical Space is Not Available
- Cageless Physical Collocation Currently In Use in Washington
- CLECs Can Include Cageless Physical Collocation in Negotiated Agreements
- CLECs With Existing Agreements May Request to Have Cageless Physical Collocation



Number and Location of AT&T, DIGEX, GTE/BBN Planet, PSINet, Sprint IP Services, MCI and Worldcom/UUNET DS3 Backbone Cities

Source: Boardwatch Magazine (2-98)

US WEST
Switched Access
Minutes of Use
January 1998

State	Lata's per State in US West's Region	Interstate Total	Intrastate Interlata Total	Intrastate-interlata total/interstate total
ARIZONA	2	791,079,650	83,802,251	11.00%
COLORADO	2	800,830,316	87,133,488	11.00%
IOWA	4	246,287,267	83,030,437	34.00%
MINNESOTA	4	461,196,969	160,509,859	35.00%
MONTANA	2	102,894,246	21,827,128	21.00%
NORTH DAKOTA	2	58,022,944	11,506,218	20.00%
NEBRASKA	2	138,254,892	36,479,870	26.00%
OREGON	2	329,462,535	83,413,446	25.00%
WASHINGTON	2	582,551,580	105,484,524	18.00%