BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Implementation of the Local Competition	)	CC Docket No. 96-98
Provisions in the Telecommunications	)	
Act of 1996	)	
	)	
Interconnection between ILEC	)	CC Docket No. 95-185
Carriers and Commercial Mobile Radio	)	
Service Providers.	)	

DECLARATION OF
KEN BASEMAN, RICK WARREN-BOULTON AND SUSAN WOODWARD
IN RESPONSE TO
SECOND FURTHER NOTICE OF PROPOSED RULEMAKING

INTRODUCTION

1. In the Supreme Court=s January 1999 decision in *AT&T Corp. v. Iowa Utilities Board,* in which the Court upheld all but one of the Federal Communication Commissions local competition rules that had been challenged before the United States Court of Appeals for the Eighth Circuit, the Court requested that the FCC give further consideration to the necessary and impair standards of Section 251(d)(2) of the Telecommunications Act of 1996. The Commission now seeks comments in this Second Further Notice of Proposed Rulemaking on how the unbundling obligations of the Act can best facilitate the efficient creation and use of telecommunications services. We have been asked by MCI WorldCom to analyze how the Commission=s unbundling standards are likely to affect efficiency in the US telecommunications industry and to respond to certain arguments in the affidavits provided by Hausman & Sidak **(**H&S**)** and by Jorde, Sidak, & Teece (JS&T).

2. The economics of the special features of telecommunications compels us to conclude that efficiency in this setting, a setting with substantial economies of connectivity and scale over at least the initial range of outputs for an entrant, requires the availability of incumbent local exchange

carrier (aka ILEC) facilities to the ILEC=s competitors (aka CLECs) at TELRIC pricing wherever lack of access would impair the CLECs= ability to offer local services competitively.

3. In particular, we reach the following conclusions:

4. We reject the argument that the unbundling of network elements and mandating of their availability at TELRIC will undermine the incentives of ILECs or CLECs to invest and innovate. As with any threatened monopoly, the average rate of return on ILECs= extant assets will fall if CLECs can access network elements at TELRIC prices**.** But the marginal rate of return on additional investment will rise, as they are forced to compete. Essentially, we do not expect the ILECs to roll over and play dead in response to competition and to increased demand for their network elements (at prices above marginal cost!), but to respond to that increased demand by investing, for the simple reason that they are better off investing than not. Making the unbundled network elements available at TELRIC will not impair investment or innovation. Their availability is necessary for efficient use of telecommunication facilities**.**

5. We also reject the argument that an option value premium must be tacked on to TELRIC to compensate the ILECs for the possibility that their competitors may or may not choose to use their network elements at TELRIC. On the contrary**,** allowing access at TELRIC, by assuring that the ILEC=s network will be used (and paid for) by its ultimate customers, regardless of whether they are direct or indirect customers, whenever that is efficient, actually *lowers the risk* for the ILECs. As compared to the scenario where the ILEC risks losing its customers to a CLEC with completely independent network facilities, allowing access at TELRIC can be expected to result in higher capacity utilization rates on ILEC facilities, lowering the unit cost of capital by lowering the capital requirement per unit, and potentially lowering the financial cost of capital to the ILEC as well.

6. We also believe that the Commission need not concern itself overly with deciding for what network elements sharing is efficient and consequently what elements it must force the ILECs to share. The network elements that are efficient to share are those with substantial economies of scale and/or connectivity. If the elements are priced at TELRIC, CLECs will choose to buy them only if indeed these economies are present. Thus, CLEC Aexercise of the option≅ to use the elements both demonstrates that these economies are present and that sharing is efficient, and also that risk to the ILECs is reduced, not increased, by sharing. The Commission may safely require access to *all* of the elements, confident that only those for which substantial scale and/or connectivity economies are present will in fact be shared.

QUALIFICATIONS

7. Ken Baseman is a Principal with MiCRA (Microeconomic Consulting and Research Associates, Inc.), a Washington-based economics consulting and research firm specializing in antitrust litigation and regulatory matters. He received his graduate training in economics at Stanford University. He served as a senior economist in the Economic Policy Office of the Antitrust Division of the U.S. Department of Justice where, for over two years, he was a member of the Division=s trial staff in US v. AT&T. He has been an economic consultant for fifteen years. His consulting assignments have focused primarily on competitive issues, both in antitrust and regulatory proceedings. His earlier professional papers dealt with entry and competition in a regulated industry with natural monopoly characteristics, and were published in the *American Economic Review* and by the National Bureau of Economic Research and the MIT Press. His more recent publications have focused on the use on non-linear pricing and technical incompatibility by dominant firms to preserve market power in the face of developing competition. He has consulted on telecommunications issues for the Department of Justice, MCI, AT&T, GCI, the National Cable Television Association, and WebCel Communications. A copy of his vitae is attached to this declaration.

8. Dr. Frederick R. Warren-Boulton is a principal of MiCRA. Dr. Warren-Boulton holds a B.A. degree from Yale University, a Master of Public Affairs from the Woodrow Wilson School of Princeton University, and M.A. and Ph.D. degrees in Economics from Princeton University.

9. From 1972 to 1983 Dr. Warren-Boulton was an Assistant and the Associate Professor of Economics at Washington University in St. Louis. From 1983 to 1989, he served as the chief economist for the Antitrust Division of the U.S. Department of Justice (DOJ), first as Director of its Economic Policy Office and then as Deputy Assistant Attorney General for Economic Analysis. Since leaving the government, he has served as a Resident Scholar at the American Enterprise Institute, a Visiting Lecturer of Public and International Affairs at the Woodrow Wilson School at Princeton University, and as a Research Associate Professor of Psychology at the American University.

10. Dr. Warren-Boulton=s area of specialization is in the economics of industrial organization. Dr. Warren-Boulton has authored numerous publications, primarily in the application of industrial organization economics to antitrust and regulation, including a number of papers that consider appropriate public policy toward regulated industries, including telecommunications. Dr. Warren-Boulton has served as an expert witness or consultant on a number of mergers and other antitrust matters, starting in 1981 as an expert witness for the DOJ in *U.S. v. AT&T* and, most recently, for the States and the DOJ in *United States of America v. Microsoft*. A complete description of Dr. Warren-Boulton=s background and publications can be found in his Curriculum Vita, a copy of which is attached to this declaration.

11. Susan E. Woodward is a consultant to MiCRA. Her primary expertise is financial economics. Dr. Woodward was chief economist at the Securities and Exchange Commission from 1992 to 1995, where she worked on SEC enforcement matters and on regulatory issues in corporate finance, stock market regulation, and mutual funds. At the U.S. Department of Housing and Urban Development, from 1987-92, she was Deputy Assistant Secretary and chief economist. From 1985 to 1987, she was senior staff economist for financial markets and institutions at the Council of Economic Advisors, where she worked on a variety of issues, including corporate governance, pension policy, bank and thrift regulation, and federal credit programs.

12. Prior to her government service, Dr. Woodward held faculty positions at UCLA, UC Santa Barbara, and the University of Rochester, where she taught corporate finance, investments, and price theory. She has served as an expert on numerous securities fraud and related matters, and testified in tax court for the Internal Revenue Service. She holds a B.A. and a Ph.D. from UCLA. She has written and published on a variety of topics in financial economics. Dr. Woodward=s Curriculum Vita is attached to this declaration.

Will UNE Availability at TELRIC Discourage Investment and Innovation?

13. The JS&T affidavit addresses the impact of requiring network elements to be available at TELRIC on the incentives for the ILECs to make investments and to innovate.

14. The first prong of JS&T=s argument notes that the general effect of the deregulation of local telephone service envisioned in the 1996 Act is to lower the rate of return to the existing assets of the ILECs. Since the goal of the Act was to address the acknowledged degree of monopoly in the provision of local telephone service, this should not come as a surprise. But in their eagerness to apply basic corporate finance to the situation of the ILECs, JS&T confuse average return on extant assets and marginal returns to new investments and thus make a flawed prediction about whether the ILECs will be reluctant to invest in the new competitive environment.

15. We fully agree that making elements available at TELRIC may deprive the ILECs of market power and lower their average returns to assets. But competition will have a salutary effect on the marginal return to new investment as that new investment becomes necessary for the ILECs= survival. With competition, investment in new products or technologies, and in cost savings and quality improvements, becomes essential to preserve as much as possible of the market value of the incumbent=s asset base. Thus, competition increases the marginal return to investment by the incumbent at the same time as it reduces the average return on the incumbent=s extant assets down toward the competitive level. As an example close to home, consider what competition from cable service has done to the ILECs= deployment of ADSL. Here, Selwyn,

Kravtin and Coleman argue that competition from cable service has accelerated the ILECs deployment of ADSL.[1/] Though ADSL technology has been available previously, the ILECs made no attempt to make it available to their customers until the customers were offered cable access by the ILECs= competitors.

16. Moreover, the relevant issue is the effect of access at TELRIC on total investment in the local exchange market, not just on investment by the ILEC. As in any market facing competition for the first time, while we might expect that competition would spur investment by the incumbent, the relevant question is whether investment in the market, i.e., investment by the incumbent and new entrants combined, rises. If the incumbent, for whatever reason, chooses not to fight to preserve its market position, the fault is its own and the loss is to its shareholders, and this outcome is not a policy concern so long as investment and output by the entrants more than makes up for any reduction in investment by the incumbent.

Will the Competitors be Free Riding on TELRIC?

17. JS&T see access for CLECs to ILEC network elements at TELRIC prices as reducing the ILECs= incentive to invest. The main flaw in their argument is that it misses the point that under a scheme of network element unbundling, the ILEC and the CLEC are jointly providing service using the same network. Any new investments do not change their relative positions with respect to cost and quality; the absolute positions are improved for both parties by the investment when economies of scale are present, which is precisely the circumstance under which a CLEC will elect to share those assets when offered at TELRIC prices. Indeed, if the ILEC and its competitors were not competing for the same customers (but rather for some reason served different groups of customers in the same geographic area, using the same facilities), then the ILEC would actually find it profitable to offer CLECs access to its network elements at TELRIC, since the ILEC more than breaks even when the facility is priced at TELRIC. Thus, the only way that the ILEC=s incentive to invest is reduced is if the increased investment causes product prices to fall, i.e., consumers benefit. Any Aharm≅ to the ILEC, therefore, cannot be what is referred to in antitrust parlance as Aantitrust injury≅, or Aharm to competition≅, but is simply harm to a competitor.

18. In economics parlance, such a phenomenon is a Apecuniary externality,≅ not a Amarket failure.≅ Requiring access at TELRIC may Aharm≅ the ILEC, in the sense that it reduces the profits earned by the ILEC, but that is the kind of Apecuniary≅ harm to competitors that results from competition, not the genuine harm that comes from one party affecting the production

[1]See Lee Selwyn, Patricia Kravtin, and Scott Coleman, ABuilding a Broadband America: The Competitive Keys to the Future of the Internet,≅ Economics and Technology, Inc., May 1999.

function of the other (e.g., through externalities or free riding). When a new plumber moves to a small town, her entry may depress the wages of the incumbent plumbers. The fact that her decision to enter does not incorporate the impact she will have on the other plumbers= wages is not a market failure, it is the market at work, and is a form of pecuniary externality.

Should an Option Premium or other Risk Premium be added to TELRIC?

19. S&T argue, as Hausman has argued before,[1/] that allowing the ILECs= competitors to access network elements at TELRIC increases the likelihood that the ILECs= facilities will go unused (if the competitors choose later not to renew their leases) and their costs unrecovered. We believe just the opposite. Which way one comes down depends on whether competition for telephone customers resembles a game of musical chairs or the extension of telephone service to a new set of customers on Mars.

20. Let us elaborate. The customers are playing musical chairs when they are always either a direct customer of the ILEC or a direct customer of one or more of the CLECs who lease the ILEC=s network elements. In either case, they are -- directly or indirectly --- customers of the ILEC=s facilities. Thus, the facilities are always in use. So long as the ILEC gives the CLECs sufficiently good service and pricing that they do not build their own duplicate facilities (and there are powerful cost reasons for the CLECs not to build when the cost of duplication is high), there is little danger to the ILEC of idle facilities because the customers are always there and connect to those facilities either directly or indirectly.

21. In contrast, if the ILEC, by denying access to its facilities, forces the CLECs to build their own facilities, then any fluctuation in the ILEC=s market share will cause a corresponding fluctuation in the level of capacity utilization at the ILEC=s upstream facilities. A higher variance in capacity utilization rates, in turn, forces the ILEC to operate at a lower average capacity utilization rate and raises the capital costs per unit of output. The clear implication is that, if any adjustment to TELRIC for Arisk≅ is to be introduced, it would more likely be a discount for the lower capital costs per unit of output that result from lower risk of underutilization, rather than a premium.

22. The case for such a discount on *new* investment in technologies that support advanced service may be weaker, however, because the technologies are mainly modular. To the extent that capacity can be adjusted rapidly and costlessly, and transferred among firms, fluctuations in demand for upstream facilities (whether those fluctuations are reduced by allowing CLECs to

[2]Reply Affidavit of Jerry Hausman in the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, CC Docket 96-98.

access those facilities at TELRIC , as we would argue, or somehow increased, as JS&T appear to argue) do not impose much in the way of real costs on the ILEC, implying that neither a premium nor discount on TELRIC wold be indicated.

23. JS&T go on to try to make the case that the risk and hence the cost of capital to the ILEC rise as a result of making UNEs available at TELRIC. The cost of capital depends on market risk, which is the focus of the well-known capital asset pricing model. In the CAPM, there is a risk-return tradeoff, and higher market risk commands a higher return; but mere variability of income is not market risk. Only that risk that cannot be diversified away, that is, whose variability is correlated with that of the market, commands a higher return. Risk that *can* be diversified away commands no excess return. Moving from the financial realm to real activity, what this means is that only if the new policy causes the fortunes of the ILECs to depend more heavily on the general level of real economic activity will their cost of capital rise. In the parlance of the CAPM, their cost of capital rises only if their betas rise. (Beta is the regression coefficient of company returns on market-wide returns.)

24. Can the beta for the ILEC rise? The answer would be yes if the CLECs are more likely to lease than to build in low demand periods, and the reverse in high demand periods, and if these high and low demand periods correlate with high and low economic activity generally. But this would be perverse investment behavior X in low demand periods, there is plenty of capacity to lease, and less likelihood of recovering the costs of building those facilities. Thus, to the degree that the competitors do build their own facilities, they surely would do it in high demand, not low demand periods. So long as the ILEC=s plant remains larger than the entering competitors=, it will continue to have the lowest average cost, and hence be the most likely to retain customers in low demand periods. It seems thus that the beta for the ILEC will not change if the competitors do not build, and will go down if they do build. We see little possibility that the cost of capital as it is conceived by the Capital Asset Pricing Model should rise. In any event, whether beta rises or falls, the effect must be very small, far smaller than the real effect from raising capacity utilization rates discussed above.

25. In other words, so far as the *existing* plant and equipment are concerned, it is only JS&Ts confusion of average return with marginal return that leads them to conclude that investment will be impaired. Indeed, here is a perfect example of an instance in which the average return on existing assets may indeed fall (one of the intentions of the Act), but the marginal return to maintaining and upgrading these facilities will be very high. The costs of upgrading and maintaining the facilities is very small compared to their upfront cost. If the ILEC does not maintain and upgrade the facilities, it risks having the CLECs build their own facilities and steal away their customers with better service grounded on better facilities.

26. On the other hand, the availability of such facilities to the CLECs at TELRIC prices is important for several reasons. First, the market is in transition, and the CLEC may be starting at

too small a scale to realize even modest economies of scale from self-provisioned equipment. Second, economies of scale in one part of the network, e.g., the loop, spill over into other parts of the network, e.g., switching, because of the costs of connecting the elements. Thus**,** the same problems may well exist with respect to the new modular equipment which often has to be co-located in the central office. The ILECs have a natural advantage where they control the terms and conditions of co-location and face very few of these same co-location costs themselves. Once the CLECs have expanded to the point where they enjoy their own full scale and connectivity economies, full facilities-based competition will prevail. But at the outset, access to the ILEC platform is essential to get this competition established.[1/]

27. The alternative to the musical chairs vision of competitive telephone markets, efficiently sharing facilities to fully exploit economies of scale and connectivity, is a scenario in which the CLECs introduce to the system a group of customers previously unknown to the ILEC the customers on Mars. It would also have to be the case that these customers periodically exited from the market due to some disturbance in their home market. In this scenario, the ILECs would have to add substantial facilities to accommodate the CLECs and all of their new customers. When and if these customers exit, the facilities indeed go unused, and threaten a failure of cost recovery.

28. Thus the critical factual question here is whether CLECs are expected primarily to compete against ILECs for the current customer base of the ILEC, or, alternatively, whether most of the CLECs= target customers would not otherwise be customers of the ILEC. It seems clear to us that the Amusical chairs≅ scenario is a lot closer to what the new telecommunications market will look like than a world in which the CLECs do not compete for customers with the ILEC.

29. Indeed, it is clear that this is also what the ILECs believe. If the ILECs believed that the CLECs= customers were likely exclusively or even primarily to consist of customers for whom the ILEC was not a realistic alternative, they should welcome the opportunity to provide facilities at

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[3]The ILECs may object that in cases, such as switching perhaps, where the absence of long-run scale economies will not lead the CLECs to want to share the ILECs= facilities indefinitely, that the ILECs are at risk of holding stranded investment. They invest in long-lived assets in part to serve the CLECs= needs, and then the CLECs build their own facilities before the ILECs= facilities are fully depreciated. These concerns seem unlikely to generate any Aoptions≅ issues, let alone quantitatively serious ones. Given modularity in the capital components, the ILEC faces little risk of stranded investment. Modularity implies the capacity can be moved elsewhere if there is no longer sufficient local demand to utilize the facility. Moreover, demand for local service is growing rapidly, so the effect of CLECs constructing their own facilities is likely to be a reduction in the ILECs= future additions to capacity, not the stranding of prior investment. Finally, when an ILEC is faced with the prospect that a CLEC will not renew its demand for unbundled network elements, the ILEC=s incentive will be to cooperate, in a more normal commercial way, with its customer. Given modularity, there is no reason to fear that the CLEC can Ahold up≅ the ILEC in negotiations, for the ILEC always has the option of moving the capacity elsewhere.

TELRIC. As discussed above, as long as economies of scale are still present at the ILEC=s level of output, the marginal cost of providing incremental amounts of those facilities to such non-competing CLECs would be less than TELRIC. Thus, even if TELRIC were underestimated due to the omission of an estimate of option value, for provision at TELRIC to be unprofitable for the ILEC would require that the amount of any such underestimation would have to exceed the difference between average cost and marginal cost due to economies of scale. Any underestimation of TELRIC would, therefore, have to be Alarge≅ before causing any inefficiency; it is not enough to show qualitatively that some adjustment for option value is indicated.

30. But even if one did expect that the ILEC and CLEC customer bases would not overlap significantly, any appropriate adjustments to TELRIC would be small, even under relatively extreme assumptions, despite the assertions of ILEC economists which (as we have shown elsewhere) are not substantiated by more careful analysis.[1/]

31. Does this mean that there is absolutely no threat to the ILECs from the CLECs building their own facilities? We cannot say no, for there is some threat, for reasons that are generally regarded as too impolite for discussion. The main reason why the CLECs would build their own facilities is to avoid depending on the ILECs, who have proven to be and can be expected to be uncooperative. In other words, the reason the CLECs would build their own facilities in place of utilizing network elements subject to significant economies is that they face high prices and poor service from the ILECs. But is this a good reason to allow the ILECs to tack on a premium to TELRIC? Should we allow the ILECs to charge the CLECs more because the CLECs will abandon the ILEC facilities because the ILECs serve them poorly? If so, then the ILECs have an incentive to treat the CLECs even worse, and to tack an even larger premium onto TELRIC. Clearly, the incentives here would not serve consumers well at all. The Commission should stick with a standard of TELRIC with a low tolerance for uncooperative behavior on the part of the ILECs.

32. The JS&T discussion of investment incentives is confused and inconsistent regarding whether the ILEC and its competitors are competing for the same customer base. Throughout, the authors make arguments that sometimes require or assume that the ILEC and its competitors do have the same customer base (e.g., arguments relating to first-mover advantages, innovation, or free riding stories) and sometimes assume that the they have completely non-overlapping customer basis (e.g., when they argue that CLEC freedom to match their customer contracts with their ILEC contracts imposes risk on the ILEC). As a factual matter, we expect that the reality is an overlapping customer base, which should dismiss the arguments that assume the opposite (indeed, for example, CLEC freedom to match their customer contracts with their ILEC contracts reduces

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[4]See Kenneth Baseman, Frederick Warren-Boulton, and Susan Woodward, ADepreciation and Capital Recovery Issues; A Response to Professor Hausman,≅ July 24, 1996.

risk and excess capacity for both the CLEC and the ILEC). And this takes us back to the inherent efficiency of sharing facilities at TELRIC and the resulting incentive to invest: the first mover advantage for new services raises the expected return from investing early rather than delaying the investment.

33. In fact, the risk and inefficiency are much greater for all if the competitor cannot access ILEC facilities. In that case, an increase in the CLEC customer base will reduce utilization rate of ILEC facilities. With access at TELRIC to facilities that exhibit economies of scale and/or scope in either the short or the long run, capacity utilization rates at ILEC facilities are effectively insulated from fluctuations in relative market share of the ILEC and its competitors, since all those customers, whether downstream CLEC customers or downstream ILEC customers, are still users of ILEC upstream facilities. The availability of sharing at TELRIC thus greatly reduces the risk of low capacity utilization for the facilities, increases average capacity utilization, and decreases capital cost per unit output for the ILEC. Absent market power by the ILEC, we would expect a cost-minimizing ILEC to promote the sharing of those facilities, with a reservation price of marginal cost, which is far below TELRIC.

34. The ILECs= unwillingness to take advantage of these cost reductions by offering access at TELRIC is itself a telling indictment of their monopoly power ---- that they are willing to give up something that so reduces their costs because it also reduces the costs of their rivals by even more.

35. In sum, even if some facilities should have a real option component in their TELRIC price, this can be handled by using a higher cost of capital in calculating TELRIC. Furthermore the requisite adjustment will not be high, given what we know about betas and risk premiums. Hausman has tried before to wildly exaggerate the likely impact of any real option adjustment (i.e., a two to three-fold rise in the level of cost).[1/] Here, once again, we see the defensive rhetoric of the ILECs far overstretching the economic significance of this issue. The Areal options≅ issue is at most an issue of degree, and can never imply that unbundling of network elements should not be required. Efficient unbundling is the main issue, and any minor adjustments to TELRIC are merely a side issue.

[5]See footnote 3, supra.