relatively large quantities of switched access are more likely to switch to a CLEC because shifting would enable them to avoid a larger "tax" burden imposed by high switched access charges. It will likely be easier for the ILEC to target lower interexchange prices at these customers (thereby effectively lowering switched access prices), than to target lower local service prices, if only because regulators are less likely to allow local service prices to depend on interexchange usage.

13. Thus, there is a danger that RBOC re-entry into interexchange service would facilitate the targeting of lower prices at customers most likely to switch to CLEC service and deter some entry and investment by competing carriers. This would reduce the incentive for investment in higher cost facilities otherwise created by high ILEC prices for switched access. At the same time, however, it also would deny consumers the benefits of lower prices generated by such entry and investment, and any net welfare gains that could result. The ILEC does not have to lower prices in advance of CLEC entry or expansion in order to deter CLEC investment since it is the expected response of the ILEC that is the deterrent.[3]

14. *Non-Price Discrimination.* Entrants will find it costly or even economically infeasible to provide local service if they cannot purchase one or more service inputs from the incumbent, such as interconnection to terminate calls to ILEC subscribers and use of ILEC local loops. This gives ILECs a way of responding to competition without lowering their switched access prices. Raising the prices that entering carriers must pay for these inputs, refusing to supply inputs in the way that best serves the needs of entering carriers, or otherwise degrading the quality of the inputs are means of raising the costs of entering carriers. Such responses can only deter entry or protect ILEC prices against the effects of that entry, and thereby jeopardize the benefits to consumers of lower prices and more efficient sources of supply.

15. High switched access prices increase the incentives of ILECs to use the pricing and

[3] In addition, an RBOC's use of its interexchange service to target price reductions also will distort competition among interexchange carriers, an effect discussed below.

supply of inputs to limit competition from other local carriers. The ILEC will be more willing to sacrifice profits on the sale of inputs for other carriers' services when doing so protects larger, rather than smaller, switched access profits in "downstream" markets. I recognize that the 1996 Act mandates that incumbent local exchange carriers provide access to such input services on non-discriminatory terms and establishes standards for the pricing of these inputs. Such requirements, however, do not make the strength of ILEC incentives irrelevant. The requirements have to be both implemented and enforced – a difficult and costly challenge.

16. In sum, if ILECs are allowed to charge high switched access prices, they will attempt to protect the resulting revenues, and those efforts will have a substantial effect on competitive entry and the development of local competition. By contrast, preventing ILECs from setting switched access prices well above cost in the first place would effectively both eliminate the incentives of CLECs to invest in inefficient facilities, and allow consumers to realize the benefits of lower prices.

EFFECTS ON INTEREXCHANGE COMPETITION AFTER THE 1996 ACT

17. High prices for switched access will give an RBOC an artificial advantage in competing for long distance business from customers in its service area. This advantage is artificial in the sense that an RBOC gets this advantage not because it inherently is a low-cost supplier, but rather because its position as a supplier of both switched access and interexchange services gives it an opportunity not available to IXCs to partially evade high switched access prices. This advantage, as I explain below, does not depend on the RBOC using its control of switched access to provide rival IXCs with inferior quality access, or to predatorily force rival IXCs out of business in order to raise prices later (two strategies I do not address).

The RBOCs' Marginal Cost Advantage

18. The marginal costs of an IXC can be thought of as the sum of three components: (1) the marginal cost of its downstream service net of access, including the cost of carrying additional traffic between its POPs, of billing for service, and of marketing; (2) the underlying cost of the

access service it purchases; and (3) the difference between the price and cost of the access service.

19. The first two components of marginal cost for an in-region RBOC are similar to those of an IXC, but the third differs. An RBOC will not count the price it charges IXCs for switched access a cost of the switched access it supplies to itself. Instead, since an RBOC wants to maximize the sum of its profits from interexchange and switched access services, it will count as a cost of its interexchange service the "opportunity cost" of any net revenue from selling switched access that it forgoes as a consequence of selling more interexchange service.

20. High switched access prices will give an RBOC selling in-region interexchange service advantages in two circumstances. First, high switched access prices sometimes will induce IXCs to choose inefficient access arrangements with higher marginal costs than those used by the RBOC service. Second, when both the RBOC and IXCs use switched access, the last component of RBOC marginal costs – the switched access net revenue it forgoes by selling more interexchange service – may be less than the last component of an IXC's cost – the difference between the price it pays for access and the cost of producing switched access service.

21. *Inefficient Bypass.* IXCs often use dedicated access not because it is more efficient, but because the high price of switched access makes dedicated access less costly to the IXC. An RBOC's interexchange service will use switched access to serve these customers. The RBOC's choice will be based on the true marginal costs of switched and dedicated connections since the RBOC self-supplies both. Since switched access is lower cost than dedicated access when IXCs inefficiently bypass, this will lower RBOC marginal costs relative to IXCs' costs. RBOC interexchange service will gain a similar advantage if high ILEC switched access prices induce IXCs to use inefficient switched access supplied by a CLEC (whether affiliated or unaffiliated with the IXC) instead of more efficient ILEC switched access. In these circumstances, the price it charges others for switched access has no effect on the marginal costs of the RBOC's own interexchange service. The RBOC has no opportunity cost of foregone switched access net reve-

nues when it sells more of this service since the IXC would not use ILEC switched access to serve this demand. Only the RBOC interexchange service can use the more efficient switched access arrangement while avoiding the effects of the high price the RBOC charges others for switched access.

22. RBOC pricing can take advantage of these cost differences that result from high switched access prices to capture a larger share of this interexchange business than it could earn but for these effects of high switched access prices. This will be the effect on interexchange service markets if, as discussed above, the RBOC uses interexchange prices to target lower switched access prices at customers likely to shift to CLECs. Any gains from the use of more efficient access arrangements come at the welfare cost of distorting business away from otherwise more efficient IXC suppliers.

23. *Switched Access.* If switched access prices remain above cost, RBOC interexchange services will benefit from artificially lowered marginal costs when selling to customers in its local service region that all carriers serve with switched access. If each additional minute of long distance the RBOC sold reduced its sales of switched access by one minute, the RBOC would have no advantage: its opportunity cost of foregone net revenue from switched access would equal the markup over cost paid by IXCs. If the RBOC expanded interexchange sales by decreasing price, however, the most likely consequence would be that total sales by its competitors would fall by less than the expansion in RBOC sales. As a result, the RBOC's opportunity cost of foregone switched access net revenue typically would be smaller than the markup over cost paid by IXCs.

24. The result will be lower marginal costs for RBOC service if it otherwise is as efficient as IXC service, or an offset to a cost disadvantage if RBOC service otherwise is less efficient. The greater the difference between access prices and cost, the greater the magnitude of this marginal cost bias in favor of RBOC service, and the more the RBOC can expand its share of

interexchange sales beyond what it would earn if switched access were priced at cost.[4] High switched access prices have the same impact on market shares as would unequal taxes on IXCs and the in-region RBOC.

The Role of Imputation

25. The 1996 Act requires an RBOC to provide in-region interLATA service through a separate subsidiary that imputes tariffed switched access prices to its long-distance prices. This requirement may help provide regulators with useful information about RBOC behavior, but it cannot be counted on to eliminate the effects of high switched access prices described above.

26. Requiring a separate RBOC subsidiary to impute the cost of switched access prices to its service will not, by itself, change the choices the RBOC wants to make to maximize profits. This requirement will affect only how much of the profits show up on the books of the subsidiary and how much on the books of the BOC operating company. Imputation can achieve its intended purpose only if regulators take the additional step of either (a) constraining profits or prices of the local operating company to fully offset additional net access revenue booked when RBOC interexchange service expands, or (2) regulating the prices or profits of the RBOC interexchange subsidiary.

27. Under current interstate price cap rules, an RBOC would not have to reduce prices to fully offset increased switched access profits on the books of the local affiliate. All but one RBOC already has chosen, or proposed choosing, a 5.3 percent productivity factor with no sharing, so increases in booked profits will not force price reductions. In any case, the RBOC might not have to share 100% of any increased profits. The RBOC would have to make some reductions in the carrier common line charge if switched access used by its subsidiary were counted and the

[4] The RBOC advantage will be greater for calls that terminate as well as originate in its local service region, as the RBOC then self-supplies terminating as well as originating access. This implies that the proposed mergers of Bell Atlantic and NYNEX, and of SBC and Pacific Telesis, will increase the magnitude of the advantage these carriers would enjoy since a larger number and proportion of interexchange calls would both originate and terminate within the expanded local service regions of the merged carriers.

RBOC used its advantage to increase total interstate switched access minutes per line. Such reductions, however, would only partially offset the increased profits booked by the operating company.

28. The other way imputation might change RBOC behavior is for detailed regulation to require either that the subsidiary's long distance average or individual service prices equal or exceed some floor that includes imputed switched access prices, or that the subsidiary's long distance prices be adjusted until the subsidiary shows no more than some specified minimum level of profit. Such regulation would be fraught with difficulties, uncertain, costly, and time-consuming. Furthermore, such pricing floors might not constrain the RBOC in all cases since it need not necessarily price below the sum of its marginal cost and the price of switched access to exercise its advantage.

Effects on the Interexchange Market

29. In this section, I examine the effects in the interexchange market of the RBOCs' unique ability to partially evade high switched access charges. I do not evaluate the impact of RBOC entry itself.

30. One outcome will be a "share stealing" effect – RBOCs will capture a larger share of sales to in-region customers than they otherwise would. The shift of sales will shift net revenues and profits from the IXCs to the RBOCs. Real-world firms often face downward sloping demand curves because of product differentiation and therefore set price somewhat above marginal cost even when they sell in markets that are effectively competitive. IXCs might well need some or all of the lost net revenues to cover fixed costs, and therefore, one must not think the IXCs' loss of net revenues necessarily will be a sacrifice of supra-competitive profits. IXCs with substantial sunk investments that cannot be redeployed will be unable to earn their expected returns on these investments, and IXCs may be discouraged from making new sunk investments to maintain or expand capacity. Investments in "brand-specific" product development and marketing are likely to be particularly vulnerable since they will be difficult to redeploy. As smaller firms lose

business, some may cease to be profitable and stop supplying the market.

31. Effects on consumers and welfare will be driven by a variety of factors and forces. An RBOC will wish to set somewhat lower interexchange prices and produce more output than it otherwise would because it sees lowered marginal costs due to the advantage it gains when access prices are high. At the same time, the responses of rival IXCs to lower RBOC prices will be limited by the high access prices charged IXCs, which in turn will limit how much the RBOC will lower prices. RBOC shareholders will gain from the shift of profits since they will need to share with consumers only a limited part of the gains they get from their advantages. Moreover, as explained above, the trade diversion effect may threaten the viability of some smaller IXCs that exercise a potentially important competitive constraint in the market – further reducing the downward pressure on pricing. In addition, if the RBOC is not as efficient as the IXCs, production would be shifted from a more to a less efficient supplier, and that effect would reduce social welfare and could reduce any tendency for prices to fall.

32. The share stealing effect created by high switched access prices itself could affect the productive efficiency of carriers. If exposing a regulated firm to strong competitive pressure increases its efficiency, the advantage the RBOCs gain from high switched access prices could reduce the pressure on them to be efficient by offsetting some disadvantages of being inefficient. The loss of share and disadvantages of the IXCs could reduce their incentives to invest in new technologies and services, reducing their efficiency over the longer term. Although the net impact of such changes are difficult to predict with certainty, they provide additional reasons why the trade diversion effect could reduce welfare.

CONCLUSIONS

33. The Telecommunications Act of 1996 intends to give consumers a wider range of choices, both by lowering barriers to competition in local service, and by setting conditions under which an RBOC may provide interexchange service in regions where it supplies local service. Access charges set above cost will alter the resulting course of competition for both types of services.

One would hope that allowing RBOCs to supply interexchange service would lead to a market test of their efficiency. With switched access prices above cost, the test will confound the effects of their underlying efficiency with the artificial advantages conferred by high switched access prices. Much like their false invitation to CLECs to inefficiently enter the local market, high access charges may invite inefficient entry of ILECs into the interexchange market. One would hope lowering the barriers to local competition would lead to market tests of how local service can most efficiently be supplied. High switched access prices instead are likely to substantially affect the magnitude and types of investments made by competing local carriers.

34. The phenomena I describe include means by which some consumers partially evade high switched access prices and therefore may gain some benefits. These improvements are illusory as they provide only incomplete and imperfect corrections of the distortions of high switched access prices. Lowering switched access prices for all carriers would produce far greater benefits without the offsetting harms. All interexchange carriers, not just RBOCs, would face lowered costs, and competition would insure that more of the gains would be passed on to consumers in the form of lower prices. Consumers' choices among interexchange carriers would not be distorted by attempts to evade high switched access prices. Competing local carriers would be encouraged to make efficient investments and discouraged from making inefficient investments, without denying consumers the benefits of lower prices.

35. The new environment created by the Act of 1996 will increase the impact of high switched access prices on market outcomes. If, and to the extent, the collection of "tax revenue" continues to be necessary to serve social purposes, I urge taxes be sought that are less distortionary than pricing LEC switched access above costs. Using particular prices of particular suppliers as a means of tax collection will increasingly distort market outcomes as more and more aspects of the supply of telecommunications services become subject to competition.

Franklin M. Fisher

Franklin M. Fisher is Professor of Economics at the Massachusetts Institute of Technology, where he has taught since 1960. He holds the A.B. (1956), M.A. (1957) and Ph.D. (1960) degrees from Harvard University in economics. Professor Fisher is the author of more than twelve books and well over one hundred articles on economic theory, industrial organization, and econometrics. He is a former President of the Econometric Society, and a Fellow of the American Academy of Arts and Sciences. In 1973, Professor Fisher was awarded the John Bates Clark medal of the American Economic Association, given biennially to an outstanding economist under the age of forty.

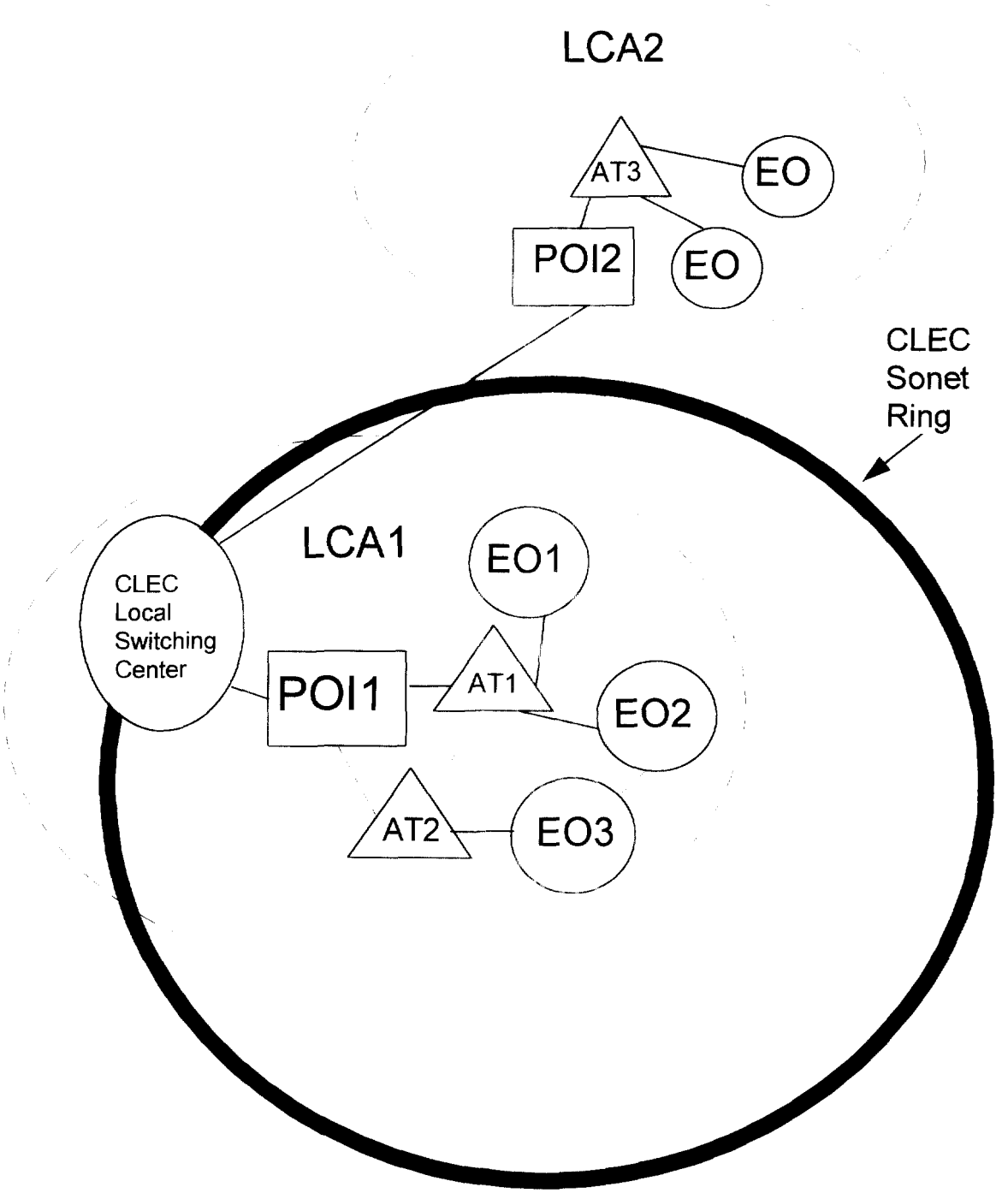
Professor Fisher both consults and appears frequently as an expert witness, and has written extensively in the area of antitrust. His recent publications include *Industrial Organization, Economics, and the Law* (Collected Works, Volume I, 1991); "*Matsushita*: Myth v. Analysis in the Economics of Predation" in the *I.T.T. Kent Law Review* (1989); and "Organizing Industrial Organization: Reflections on the *Handbook of Industrial Organization*" in the *Brookings Papers on Economic Activity* (1991). Among his many other publications are *Folded, Spindled, and Mutilated: Economic Analysis and U.S. v. IBM* (1983), coauthored with John J. McGowan and Joen E. Greenwood, and *Antitrust and Regulation: Essays in Memory of John J. McGowan* (1985), edited and contributed to by Professor Fisher.

Professor Fisher is the chair of the Harvard Middle East Water Project, a joint endeavor of Israelis, Jordanians, and Palestinians that is playing a role in the current peace process in the Middle East.

Attachment 2

Point of Interconnection

Diagram 2: Point of Interconnection



POI = point of interconnection
AT = access tandem
LCA = local calling area
EO = end office

CERTIFICATE OF SERVICE

I, Stan Miller, do hereby certify that copies of the foregoing Reply Comments were sent via first class mail, postage paid, to the following on this 30th day of May, 1996.

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