facilities is but one part of the entry process. The entrant must also sink a variety of other costs (such as for its own facilities, for the marketing resources necessary to attract a sufficient customer base to justify investments in larger scale facilities where economies of scale are important, and for legal fees to pursue credibly the inevitable disputes with Ameritech). Whether this possible growth in customers can be realized, even using UNEs obtained from Ameritech, remains to be seen.

71. Harris and Teece also present calculations of the total amount of Ameritech Michigan's local service within a one-half mile or four-mile distance from existing facilities of the CLECs. The calculations based on the one-half mile distance are said to be relevant for wireline increments to existing facilities, and the calculations based on the four-mile distance are said to be relevant for wireless local service. Absolutely no justification is offered for the implied proposition that the sunk costs of adding incremental capacity are low if the potential new customers are within one-half mile of the a CLEC's existing facilities. Moreover, since fiber rings are often the facilities from which the measurements are made, it is clear that Harris and Teece's calculations are meaningless.[54]

72. Harris and Teece's four-mile calculations are of no relevance today because wireless is not yet proven to be an effective means of competing for local service. AT&T's announcement that it

[54]See Hatfield Associates, Enduring Local Bottleneck, for explanations of why the sunk costs can be very large for extending service to new customers far closer than one-half mile to an existing fiber ring.

will beginning testing wireless technology notwithstanding, no local service entrant has yet offered wireless service as a replacement for (rather than complement to) the wireline service offered by Ameritech.

## VI. AMERITECH'S WITNESSES ASSERT THAT ANTIDISCRIMINATION REGULATION IS NOT NEEDED, AND THAT REGULATION WILL CORRECT COMPETITIVE ABUSES. THEY ARE WRONG ON BOTH COUNTS.

73. Ameritech affiants Gilbert and Panzar (p. 22) contest the view that Ameritech will have incentives to discriminate against rivals in interLATA long distance. They cite a discussion paper by Sibley and Weisman[55], which uses a modified Cournot model[56] to ask whether a monopoly LEC's profit gains from discriminating in long distance outweigh the lost profits from reduced

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[55]"Raising Rivals' Costs: The Entry of an Upstream Monopolist into Downstream Markets," discussion paper March 1997.

[56]In a Cournot model, firms are assumed to act as if they select quantities rather than prices. Clearly, however, MCI, AT&T, and the other IXCs set prices and then observe the resulting equilibrium.

The Cournot model is often used by economists to model markets firms first choose capacities (which limits the quantities they can make), and then they set prices, since this intuitively reasonable two-stage process generates approximately the same pricing predictions as the simple one-stage Cournot model. This rationale for using the Cournot model is not available for Ameritech's economists, however, since they also claim that there is enormous excess capacity in the long-distance market.

Finally, economists sometimes use the Cournot model because it has been found to accurately predict past behavior in an industry. But none of Ameritech's economists present any evidence that the past behavior of the long-distance industry is consistent with the Cournot model. Two of Ameritech's witnesses have examined whether the predictions of the Cournot appear reasonable for interLATA long distance service, and they concluded "... that inter-LATA competition is more vigorous than that predicted by the Cournot model." (See Robert Crandall and Leonard Waverman, *Talk is Cheap*, The Brookings Institution: Washington D.C. (1997), p. 163.

purchases of access by independent IXCs if the LEC discriminates against them in the provision of access. An earlier version of the Sibley and Weisman paper erroneously claimed to establish that the LECs had strong incentives not to discriminate in Cournot equilibrium. This earlier paper was widely cited by economists for the BOCs, including all the economists who filed affidavits in support of Ameritech's earlier, abortive Michigan 271 application. However, the earlier paper contained technical errors, and Sibley and Weisman model now finds that discrimination by the ILEC is profitable under even a broader set of conditions than in their previous paper. Among Ameritech's economists, only Gilbert and Panzar now refer to the new Sibley and Weisman.

74. Serious problems remain even with the new Sibley and Weisman paper. They address incentives for discrimination when a BOC enters long-distance service and its share is initially small. Differing firm sizes can be accommodated in asymmetric versions of the Cournot model. And it is easy to show that even if the BOC has a low market share, it has strong and pervasive incentives for discrimination in Cournot equilibrium. Sibley and Weisman arbitrarily treat the BOC long-distance entrant differently than the other long-distance competitors. The other firms "play Cournot," but the BOC does not when its share is small. More troubling, Sibley and Weisman do not derive predictions of the BOC's behavior based on profit maximization, but rather ask whether the BOC has an incentive to discriminate conditional upon having made arbitrary and non-profit-maximizing quantity choices. Absent some rational motivation for the BOC's assumed behavior (and Sibley and Weisman provide none), this is simply not an interesting exercise. All models of this problem of which we are aware that examine a market equilibrium

among profit-maximizing firms find that, for parameter values that seem plausible in telecommunications today, a BOC would have pervasive incentives for discrimination because the BOC's profit gains from discrimination outweigh the profits it foregoes from lost access sales. Beard, Kaserman, and Mayo[57] obtain this result for a Bertrand equilibrium (in which firms are assumed to set prices) with differentiated products. It is easy to show the result holds in a homogeneous-good Bertrand model. Economides[58] finds — as Sibley and Weisman now agree — that an input monopolist will discriminate in a symmetric Cournot equilibrium.

75. Finally, Gilbert and Panzar's claim that discrimination cannot be expected under "plausible assumptions" cannot even be reconciled with Ameritech's other experts. MacAvoy cites Ameritech business plans which show an expected interLATA market share for Ameritech that falls in the range where Sibley and Weisman find a positive incentive for discrimination.[59]

76. Gilbert and Panzar assert that there is no evidence of competitor complaints against Ameritech or other BOCs from competitors in markets that require access to the local exchange bottleneck. Therefore, regulatory sanctions must be sufficient to prevent anticompetitive

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[57]"Regulation, Vertical Integration, and Sabotage" Auburn University Working Paper, November 1996.

[58]"The Incentive for Non-Price Discrimination by an Input Monopolist", Stanford University Working Paper, April 1997.

[59]See Affidavit of Paul W. MacAvoy in Support of the Application of Ameritech Michigan for Provision of In-Region InterLATA Services in Michigan, p. 65.

behavior. Gilbert and Panzar are simply mistaken. In Michigan, Ameritech's defiance of orders to provide intraLATA one-plus presubscription (presubscribed intraLATA carrier or PIC) has generated numerous competitor complaints and lawsuits. Ameritech's refusal to accommodate market-opening regulations has seriously slowed the development of intraLATA toll competition. Other examples of the BOCs' "misbehavior" were listed in paragraph 25.

77. Wilk and Fetter, as well as Gilbert and Panzar, argue that regulation today is fully capable of policing anticompetitive abuses. Wilk and Fetter (pp. 24-25) argue that because regulators can order refunds on overcharges and issue cease and desist orders, consumers and competitors will be adequately protected against anticompetitive behavior. As we argued above, and further discuss in Appendix A, this proposition is simply wrong. Both the social losses due to anticompetitive behavior and a BOC's profits from engaging in such practices exceed the overcharges that regulators would calculate under their conventional methods. Therefore society is not made whole, nor is a BOC adequately deterred from anticompetitive behavior by conventional regulatory tools.

78. Wilk and Fetter (pp. 17 and 45) advance a truly silly argument regarding whether regulators will be able to detect easily anticompetitive discrimination by Ameritech Michigan. They argue that the discrimination would have to be evident to customers, but yet hidden from regulators, before it can be a successful anticompetitive tactic. This is incorrect. It is true that customers must perceive an advantage from buying service from Ameritech before discrimination

against competitors can pay off for Ameritech. However, unless Wilk and Fetter are suggesting that any customer preference for Ameritech's service can only be due to discrimination, the fact that customers perceive an advantage from dealing with Ameritech only begins the inquiry. Regulators must then undertake the difficult, and technically complex, assignment of determining whether the observed customer preference is due to discrimination by Ameritech that degrades the quality of competitors services relative to its own or due to other factors.

## VII. AMERITECH'S "CASE STUDIES" ARE FLAWED.

79. Ameritech's economists also present a variety of "case studies," which they regard as suggestive evidence about either the benefits of more long-distance entry, or about the proposition that current regulations have adequately controlled any incentives for anticompetitive behavior.

The U.K. Cellular Market and the Chilean Long-distance Market

80. In the former category, Crandall and Waverman argue that the move from two to three competitors in the United Kingdom's cellular market and in Chile's long-distance market generated substantial price reductions and consumer benefits. These examples actually provide evidence against BOC interLATA entry. First, the U.S. interLATA business already has four nationwide, facilities-based carriers. There are a number of regional carriers as well, so we already have at least four, and often more, facilities-based competitors. The Chile and U.K. examples provide no evidence on the potential effects of adding a fifth (or sixth or seventh)

interLATA competitor. Rather, these examples support the case that very substantial facilities-based entry is needed before competition can be effective. In each of these cases, Crandall and Waverman argue that competition between two well-established firms with substantial market shares was not very effective in holding down prices. Additional entry by firms with their own facilities generated significant additional competition. Yet in Michigan, Ameritech argues that regulation plus a hint of local competition can yield competitive performance in the market for local exchange services. The lesson to be drawn from these examples, therefore, is that regulation must be supplemented by a lot more than a hint of competition before the benefits to consumers from additional competition have been exhausted. Thus the analogies support our contention that substantial facilities-based entry is necessary before we can expect effective competition in the local exchange.

U.S. Cellular Markets

81. Ameritech argues that the competition between wireline and non-wireline cellular carriers shows that the LECs don't behave anticompetitively against unintegrated rivals. The market share advantage of the wireline carriers in cellular is said to be "small," a result that is argued to be inconsistent with discrimination. In reality, however, some cases of discrimination have been documented, such as Bell Atlantic's resistance to testing new service implementation with McCaw until the new features had been tested and implemented for its own cellular operation in

Pittsburgh.[60] In addition, for years the BOCs refused to provide unaffiliated "A-side" cellular companies with access arrangements as efficient as those provided to affiliated, "B-side" companies. Moreover, it is not clear how much deviation from 50/50 shares can be expected even with discrimination. Each cellular licensee in an area has the same amount of spectrum, and there are costs (additional equipment and possible quality degradation) of using the cellular spectrum capacity more intensely. It is thus far from clear that an apparently small share advantage for the wireline carrier implies no discrimination.[61]

GTE/Sprint and United/Sprint

82. The absence of proven competitive abuses following the merger of GTE and Sprint proves nothing about the incentive or ability for anticompetitive behavior by the RBOCs under the conditions that are likely to hold for their entry into long distance. Sprint apparently increased its market share in GTE territories relative to the rest of the country during the period of GTE's

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[60]See Douglas Bernheim and Robert Willig, *The Scope of Competition in Telecommunications*, AEI Studies in Telecommunications Deregulation, Oct. 1996, chapter 4 at pp. 94-5.

[61]The highly profitable cellular duopoly markets may not be good analogies for analyzing the BOCs' incentives to discriminate in the far more competitive long distance business. In cellular, incentives for discrimination may have been tempered in order not to rock the boat and initiate a price war. That is, a noncompetitive duopoly was historically so profitable that discrimination would raise risks of lower prices for both firms if the non-wireline carrier tried to compensate for the poorer quality of its service (due to the assumed discrimination by the BOC) with aggressive pricing. In contrast to cellular, where the BOCs could earn profits far above the competitive level, in long distance the ability of the BOCs to earn supra-competitive returns will likely depend on discriminating against other carriers.

ownership.[62] The consent decree allowing that merger required detailed structural separation. As such, vertical economies were precluded. Discrimination, however, is still quite possible, since GTE's employees could recognize and act on opportunities to favor Sprint. Thus the most plausible explanation for Sprint's share growth was discrimination.[63]

83. GTE sold Sprint to United. United was able to win antitrust approval for the transaction without a separate subsidiary requirement. Thus its ability to engage in anticompetitive behavior is greater than GTE's ability had been. And indeed, there is evidence since the merger that local service prices have increased abnormally for the United local exchanges (which is consistent with cross-subsidy) and that Sprint's market share has grown more in the United exchanges than in the rest of the country (consistent with discrimination).[64]

84. Finally, smaller and more geographically dispersed LECs, such as United and GTE, present smaller competitive risks from vertical integration into long-distance service than do the BOCs. A smaller fraction of their calls originate and terminate within their regions, so the advantages the

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[62]See Report to the Court of the Approval by the U.S. Department of Justice, Pursuant to Paragraph VI (A) of the Final Judgment in United States v. GTE Corporation, of the Proposed Joint Venture Between GTE Corporation and United Telecommunications, Inc., at 10, United States v. GTE Corp. (filed June 30, 1986 in D. C. District Court) (C.A. No. 83-1298).

[63]Sprint's pricing did not vary across regions, so the share growth differences could not have been due to pricing.

[64]Douglas Bernheim and Robert Willig, *The Scope of Competition in Telecommunications*, AEI Studies in Telecommunications Deregulation, Oct. 1996, Chapter 4 at p. 112.

BOCs will obtain from entry before access is reformed are less important for the smaller LECs. In addition, to the extent discrimination cannot easily be fine-tuned (e.g., a LEC may be able to discriminate against an IXC's incoming and outgoing calls, but be unable to discriminate as well against only one type of call), then discrimination becomes more profitable and more likely when the LEC controls both ends of the call. Less of the discrimination is then wasted, in the sense that the quality of a rival's call is reduced when the chances the LEC will obtain the long-distance business are low.[65] In its BOC Non-Dominance Order, the FCC concluded that the risk of discrimination from the BOCs was greater than from the independent LECs.

Michigan Information Services

85. Panzar and Gilbert argue that since there have been no complaints in Michigan regarding information services, it must be that Ameritech is not discriminating in this area. They fail to note, however, that there have been abuses in other states, such the Georgia episode cited in paragraph 17 above. In addition, one would not expect many problems to result in complaints to regulators. If the regulator lacks either the authority, the interest, or the ability to impose an affirmative obligation to cooperate with other information services companies as technology evolves, companies will not find it profitable to spend the resources filing complaints with regulators. With rapidly changing technology, as for information services, it is not surprising that competitors

[65]A LEC will not want to discriminate in terminating access against a call that originates in an area where it has little or no presence as a long-distance supplier.

would feel it is not worth the money to attempt to get regulators to establish and enforce an "equal cooperation" standard on the local exchange carriers.

SNET's InterLATA Entry in Connecticut[66]

86. Crandall and Waverman argue that SNET's entry in Connecticut demonstrates the beneficial effects of interLATA entry by a LEC. They argue that SNET's prices are 25% lower in Connecticut than the prices of other carriers. But that assertion is incorrect,[67] even for the low volume users. SNET's best available rate for small volume users is higher than the best available rate from MCI and Sprint, and other long-distance carriers will in some instances price below MCI and Sprint.[68]

## VIII. COMMENTS ON DR. MARIUS SCHWARTZ' AFFIDAVIT FOR DOJ

87. Dr. Marius Schwartz filed an affidavit for DOJ on Southwestern Bell's 271 application in Oklahoma. His affidavit provides the first economic statement sponsored by DOJ concerning the

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[66]The Connecticut experience is discussed in more detail in Robert Hall's companion affidavit.

[67]The authority they cite for the claim that SNET's prices are lower than other carriers by 25% is a statement made by Jerry Hausman at the FCC on a July 23, 1996 "Economic Forum: Antitrust and Economic Issues". No study was provided with this speech, so there is no way for a third party to even examine the basis for the calculation.

[68]SNET's basic interstate rates are $0.23 per minute during peak periods and $0.13 during off-peak. Rates for intrastate interLATA service are $0.18 and $0.10, respectively. AT&T and Sprint have completely unrestricted rate plans at $0.15 per minute, and MCI's MCIone plan is a uniform $0.12 per minute for customers with monthly bills exceeding $25 and $0.15 for customers with lower bills. Under Sprint's "dime" rate plan, customers pay $0.10 per minute off-peak and $0.25 per minute during peak times.

appropriate conditions under which a BOC should be allowed to provide interLATA service. Dr. Schwartz is in agreement with much of what we say, although there are some areas of disagreement. In particular, we agree with Dr. Schwartz that:

- Regulation can be at best an imperfect constraint on anticompetitive behavior, and it is naive to believe otherwise. (Paragraphs 127-148) Regulation will be especially ineffective when technology is changing. (Paragraphs 13, 154)
- The BOCs will have significant incentives for anticompetitive behavior, due substantially to their incentives to evade regulatory constraints on their prices and/or profits, if they provide interLATA service while retaining market power, subject to regulation, in local service. (Paragraph 10)
- Regulatory conditions for procurement by CLECs of inputs from the BOCs should be irreversibly established before interLATA entry by a BOC is allowed. (Paragraphs 17, 19, and 154) This is the case in part because regulators will not likely revoke interLATA authority once it is granted. (Paragraphs 16, 157)
- Full implementation of the competitive checklist is a necessary but not sufficient condition for BOC entry. This requires that the BOC's compliance be proven under commercial conditions. (Paragraph 19)
- Generally, significant local entry must have occurred prior to a grant of within-region interLATA authority to a BOC. (Paragraph 20)

88. We apparently disagree with Dr. Schwartz on the extent to which vertical integration by the BOCs will result in efficiencies or cost savings from which society cannot otherwise expect to benefit. Unfortunately, it is not now possible to explore the reasons for the disagreement because, although Dr. Schwartz indicated (Paragraph 85) that his affidavit would later provide a discussion of why he believes the efficiencies are very significant, no such discussion is offered.

89. Since we believe that the foregone efficiencies are not significant, we argue that the BOCs' local market power should be substantially eroded by entry before they are allowed into interLATA service. Schwartz rejects a local market power based-standard (Paragraph 150), but presumably this is because he is willing to accept competitive risks in long-distance, local, and integrated services as a necessary trade-off to realize his assumed efficiencies from vertical integration, or because he believes there is a real risk that the IXCs would strategically delay their entry into local markets in the hopes of keeping the BOCs out of long distance. The latter possibility is very remote: BOC entry into interLATA service should be allowed before the BOC's local market power has been substantially eroded by entry only if the facts show that non-IXCs are profitably entering local service, while the IXCs' local operations are growing at a clearly slower rate than those of the non-IXCs.

90. It is unlikely that all the IXCs would hold off on local entry to delay the BOCs long-distance entry. First, this strategy is very risky because if regulators observe such behavior, they can then allow the BOCs into long distance even though the local, regulated bottleneck remains

intact. That is, the regulatory standard for BOC interLATA entry is easily reversible if regulators believe, based on the facts over the next several years, that the absence of IXC entry is due to strategic gaming. Second, the assumed strategy would be very risky for business reasons. Because MCI's entry strategy for local telephone service has stressed a conventional land-line build-out of fiber facilities, which is slow and time-consuming, it knows that to have a significant local operation several years from now, it will have to invest substantially and continuously over the next several years. If it chose to pull its punches on local entry, and AT&T's wireless local technology turns out to be very successful, it would then quickly be faced with strong vertically integrated competition from both AT&T[69] and the BOCs, while MCI remains unintegrated. In a world where consumers value one-stop shopping, this strategy would be a disaster for MCI. Third, the local market is now quite profitable, so entry is as attractive for the IXCs as it is for other entrants. Fourth, the Federal Communications Commission's access charge decision left access revenues far in excess of cost. As a result, the IXCs have a uniquely powerful incentive for local entry — to integrate around the exorbitant fees they must pay for local access so long as they remain unintegrated.

[69]If wireless does turn out to be an economically viable way to provide local service, entry could occur far more quickly than for land-line facilities. The sunk costs of adding additional customers should be lower for wireless and, unlike land-line technology, for wireless the customer-specific sunk costs need not be incurred until the customer signs up for service.

## IX. SUMMARY

91. The line of business restrictions in the MFJ were based on the incentives for the BOCs to enter markets adjacent to their bottleneck local exchange operations in order to evade the constraints regulators were placing on their prices and profits in local exchange services. In our view, the public interest consideration in section 271 still requires substantial, facilities-based competition before the BOCs should be allowed to provide interLATA long-distance service. At that point, competitors in adjacent markets (long distance) no longer need rely exclusively for an essential input on firms with strong anticompetitive incentives.

92. InterLATA long distance is not the only business that can be adversely affected by a premature grant of interLATA authority. The Telecommunications Act of 1996 opens local exchange markets to competition. Premature interLATA authority will give Ameritech a greater ability to engage in behavior that can foreclose or delay local competition, such as signing up important customers to long-term contracts for bundled services, cutting prices selectively to customers most likely to patronize new entrants, raising customer switching costs, and sabotaging attempts by new local competitors to rely in part on Ameritech's facilities as they begin to provide local service.

93. Exactly what "substantial, facilities-based competition" means could be a matter for debate in future 271 applications: The pro-entry view would emphasize a little actual facilities-based entry, with the potential for rapid expansion relying on unbundled network elements purchased

from the BOCs. There are two serious problems with this view. First, because Ameritech Michigan's procedures governing the purchase of unbundled elements are still in flux and have not been widely used by local service entrants, it is not possible to reach informed judgments about entry and fringe supply elasticity that relies on unbundled network elements. We should not now presume that local competition can develop rapidly, when actual experience in the near future can provide an empirical basis for making an informed judgment.[70] Second, the pricing principles for and the initial pricing of unbundled network elements have only recently been established by the Michigan Commission and are still subject to legal appeals. If the final terms are less conducive to economic purchase of unbundled network elements than the current terms, then regulators may well find themselves in the position where an interLATA application was approved based on current arrangements but would have been denied if based on the more permanent conditions. Thus, even if regulators are far more optimistic about the ability of state and federal regulators to manage efficiently competition through regulation of unbundled elements than we are, it is clear that no informed decision can now be made about the potential for competition based on unbundled elements in Michigan.

94. Finally, the Ameritech application is also premature when judged against the "carrot" rationale for interLATA entry. Ameritech's incentive to cooperate in making unbundled elements

[70]For example, Ameritech asserts that unbundled switching is now available. MCI disagrees, saying that Ameritech is not offering technically feasible unbundled switching of the type necessary to support a competitive commercial offering. The important question is whether what Ameritech calls unbundled switching can support a competitive service offering is significant actual local competition develops from companies buying Ameritech's unbundled switching.

available at cost-based rates derives entirely from the prospect of being allowed to provide interLATA service. Their business incentives are entirely the opposite -- firms generally do not want to reduce the costs others must incur to enter their markets, and Ameritech is no different. If Ameritech gets its reward (or gets and eats its carrot) before regulators can judge how well the procedures governing competitors' access to unbundled elements actually work in practice, regulators will have no benchmarks against which to judge Ameritech's subsequent behavior derived from a time when it had at least some incentive to cooperate.

I hereby swear, under penalty of perjury, that the foregoing is true and correct, to the best of my knowledge and belief.

Kenneth C. Baseman

Kenneth C. Baseman

District of Columbia, ss:

Subscribed and sworn to before me this 9th day of June, 1997.

Notary Public

My Commission Expires October 31, 1999

I hereby swear, under penalty of perjury, that the foregoing is true and correct, to the best of my knowledge and belief.

Frederick R. Warren-Boulton

District of Columbia, ss:

Subscribed and sworn to before me this 9th day of June, 1997.

Notary Public

My Commission Expires October 31, 1999

# Appendix A

## APPENDIX A

### Why Traditional Regulation Will Likely Be Ineffective in Controlling Anticompetitive Behavior

1. The tools and traditions of regulators are less well suited to disciplining incumbent resistance to opening up local markets to competition than to dealing with traditional regulatory issues in an unchanging regulated environment. Traditional regulatory tools may work well when dealing with issues such as revising the price for local exchange service to a particular class of customers in a stable economic environment. A traditional regulatory approach is likely to be inadequate, however, when both entrants and consumers are affected by the incumbent's compliance decision, when incumbent decisions can impose irreparable harm, or where detection and punishment for bad acts are not certain (implying optimal penalties that are a multiple of the harm in cases where violations are detected).

2. To illustrate, let us begin with an example where regulation is least likely to result in error, and then relax some critical assumptions.

### (A) Traditional regulation of consumer prices charged by a regulated monopoly: Remediable harm with eventual regulatory certainty.

3. Many regulators have allowed rate increases to go into effect subject to review. If the review shows that the rate increase was not warranted, then the firm is ordered to refund the excess charges on the quantity actually purchased by the consumers. This procedure can work fairly well because: (a) only consumers are affected by the initial overcharge, (b) consumers may

have purchased little more at the lower price,[1] (c) the harm to consumers and society is easily reparable (except for the aforementioned difference in quantities) through future refunds, and (d) the probability of detection is high (i.e., the regulator eventually selects the "right" price, based on regulatory principles, after its review). Importantly, the regulated firm has no incentive to restrict consumers' purchases through non-price rationing devices. That is, the firm knows a higher price will induce lower unit sales, but the firm wants consumers to buy as much as they demand at the higher price.

**(B) Irreparable harm, with eventual regulatory certainty.**

4. Let us now change the example to an interconnection decision, or to a case where the LEC tries to restrict the quantities of UNE's purchased by entrants. We continue to assume that ILEC refusal is frivolous, in the sense that the RBOC believes that it will eventually be required to interconnect, or provide the quantity of UNEs that entrants demand. Under these conditions, it becomes much more likely that the penalty imposed will fail to fully reflect the harm to the rest of society, since the parties harmed include not only the entrant (or potential entrants) but also a multitude of dispersed consumers that would have benefitted from increased competition. As a practical matter, the harms to both consumers and potential entrant(s) will be difficult to estimate

[1]This is especially true if the price is a monthly lump-sum price, as in the monthly rate for unlimited local service. In that case, customers' quantities of minutes will not be affected unless they drop service due to the rate increase. The available empirical evidence indicates that the demand for local service is very price inelastic, so the difference in quantities chosen at the higher and lower prices should be small.

accurately, and many consumers will be unaware of the harm they have suffered, making it difficult and expensive to identify and compensate them. (Analogous problems that lead to irreparable harm arise in antitrust class action cases).

5. Since entry reduces total profits and increases total welfare, the gain to a monopolist from deterring entry exceeds the gain to the entrant from entry, but is less than the gain to the entrant plus the gain to consumers. The appropriate amount to charge the ILEC when it finally must comply is the present value (including interest) of the effect on the rest of society; i.e., the lost profits to the entrant plus the loss of consumer surplus to consumers. We can rank the effects of non-compliance quantitatively as:

-the harm to entrant plus harm to consumer is greater than

-the gain to ILEC, which is greater than

-the harm to entrant.

It follows that even completely compensating the entrant for the effects of delay will provide insufficient incentives for the ILEC to comply, and lead to harm to competition and to consumers.

**(C) Irreparable harm, with continuing regulatory uncertainty.**

6. Whenever the probability of detection and punishment is less than one, the optimal penalty to be imposed when a violation is detected and punished is a multiple of the harm caused: in its simplest formulation (i.e., assuming no false positives) the optimal penalty is:

$$F^* = H/R$$

where $F^*$= optimal penalty, H= harm to the rest of society, and R = probability of detection and punishment.

7. As discussed generally above, however, many acts an ILEC undertakes to inhibit entry into the local exchange may go undetected or unpunished. Thus optimal compliance requires that, when intentional violations are detected and punished, the penalty should be a multiple of the harm caused. Unfortunately, given the complexity of these decisions and the informational asymmetry between the ILEC and regulatory bodies -- and even between the ILEC and the entrant -- establishing clear intent often may be very difficult. Therefore, compliance can only be ensured by imposing truly draconian penalties when clear intentional violations are identified. To the extent that regulators would be unable or unwilling to impose such draconian penalties -- or, even more obviously, when cases of clear intent are never identified -- regulatory sanctions are unlikely to be sufficient to ensure optimal compliance.

# Curriculum Vitae of
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