THE SCOPE OF REGULATION IN THE COMPETITIVE TELEPHONE EQUIPMENT MARKET

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Abstract

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I. Introduction.

The interconnection of customer-owned telephone equipment (or attachments) with the principal telephone network has long been resisted by the telephone service companies - principally the Bell system. They have argued that quality of service can only be maintained by preserving the integrity of the entire system which, it was further argued, precluded the interconnection of customer-owned equipment. For many years, their resistance was successful. The judicial decision in the Hush-A-Phone[1] case, however, opened a small door for the introduction of attachments provided by the customer. Nonetheless, the Bell system remained less than enthusiastic about interconnections.

The Federal Communications Commission (FCC) subsequently began promoting competition in the telephone equipment market. In its Carterfone[2] ruling, the FCC held that interconnection was unobjectionable under some circumstances. Based upon the sensible view that quality of service standards can be maintained by prescribing performance standards, the FCC's Carterfone decision enabled new telephone equipment producers to enter the industry. Although entry was not rapid, it was sufficient to lead two state regulatory commissions to forbid interconnection.[3] The judiciary, however, supported the FCC's procompetition policy by ruling that the FCC has jurisdiction over the interconnection policies of the telephone service companies.[4]

The FCC's promotion of competition culminated in its April 7, 1980 decision to completely deregulate the telephone equipment market.[5] Although the FCC decided that competition should rule the market for telephone equipment, it was not unmindful of the fact that the Bell system and General Telephone (GTE) could have advantages that might

lead to their monopolizing the market. Consequently, the deregulation scheme, which becomes effective on March 1, 1982, contains safeguards against monopolization. In particular, the Bell system will have to establish a separate subsidiary to sell or lease phone equipment.[6]

For state regulatory agencies, this policy does not end matters. The dual regulatory system, whereby the telephone industry has been regulated on both the state and federal levels, has led to conflict. The legitimate concerns of state regulators over the implications of the FCC deregulation decision led to the following hypothetical dialogue between a concerned Regulator and a kindly Professor.

II. Dialogue.

Regulator:

I don't understand the FCC's decision to deregulate. Everyone keeps telling me that the telephone industry is a natural monopoly and, therefore, has to be regulated in the public interest.

Professor:

It is generally true that the provision of local telephone service is a natural monopoly due to significant economies of scale.[7] Consequently, local telephone service is most efficiently provided by a single firm. But this does not mean that telephone equipment is also a natural monopoly. The manufacture of telephone equipment (e.g., instruments, key systems, and PBXs) does not appear to be characterized by the enormous economies of scale that would prevent the survival of a competitive industry. In other words, the technological condition necessary for a natural monopoly does not exist in the production of telephone equipment.[8]

Regulator:

The FCC has required that the Bell system establish telephone sub-

sidiaries to sell and lease equipment. Shouldn't these subsidiaries be regulated?

Professor:

Not at all. The equipment subsidiaries will be operating in a competitive environment and will be subject to the competitive discipline of the market place. Its prices and terms of sale are subject to the competition provided by the other suppliers of telephone equipment. Since there is no natural monopoly in this market, there is no reason why several firms cannot compete for the same business.

Regulator:

But the telephone utility is regulated. Doesn't that have some relevance?

Professor:

Not really. The fact that the telephone service business is regulated does not mean that the equipment business should be regulated as to prices, terms of sale, quality of product or the like. The competition provided by other suppliers will ensure good performance with respect to price and so on. There is no more reason to regulate the telephone equipment industry than any other consumer durable industry.

Regulator:

I keep hearing suggestions that a regulated telephone service company could use its regulated status to unfair advantage through its subsidiary in the unregulated market. Is this possible?

Professor:

Not if you, your colleagues on the Commission, and the telephone Commission staff are doing your job. In principle, the telephone service company could incur costs on behalf of its equipment subsidiary

that it passes on to its service customers through higher rates. In this fashion, the equipment subsidiary would have a competitive advantage over unaffiliated telephone equipment suppliers. At the same time, the regulated utility appears to be no worse off because it has recovered these higher costs through a rate increase in its regulated business.

There are several problems with this scenario. First, it is not clear that the transferred costs could be recovered in the manner indicated even if the Commission were to permit the rate increase. The Averch-Johnson theory suggests that constrained profits will be maximized by the regulated firm.[9] A cost increase in that situaton will lead to a reduction in profits for the telephone service company even if it is accompanied by an authorization to increase price.[10] Second, the scenario assumes that you will permit the regulated service company to absorb costs on behalf of the equipment subsidiary. But you would not permit this subterfuge. After all, you can determine which costs incurred by the regulated utility are "allowable." Only those costs properly incurred in providing telephone service would be deemed allowable. Any costs incurred on behalf of the equipment affiliate would be explicitly disallowed. For example, if a regulated telephone utility attempted to absorb the costs associated with the delivery and installation of equipment sold by its subsidiary, such costs would be disallowed in determining the rate schedule for telephone service.

This is not to imply that such determinations will necessarily be easy. In fact, the information costs will be substantial. But the information costs imposed by your present regulatory obligations are already substantial. In principle, you now need to know the entire pro-

duction function and all input prices. It is not clear just how much more information you would need to distinguish legitimate costs from those that are transferred improperly. The increase in information costs may not be too large. Clearly, some staff work needs to be done here.

Regulator:

Some economists have claimed that "a utility can use its monopoly position to subsidize the competitive portions of its operations." Unless constrained by regulation, a utility can underprice its competitive services, recouping any resulting losses by increasing its prices in the monopoly portion of its operation."[11] Don't you share this concern?

Professor:

For such a possibility to exist, the Public Service Commission would have to be an unwitting ally of the utility. This pricing strategy obviously requires a departure from the regulatory goal of producing results in the utility sectors of the economy which parallel those that would be obtained under conditions of competition. A utility can only accomplish this if the regulator permits it. Once again, I do not want to suggest that the information costs are trivial. Nonetheless, you are already doing some of this job. The alternative would be to preclude a viable competitor (the equipment subsidiary) from functioning in the market.

There is a further complication that the utility would have to consider. Specifically, such a pricing strategy could well be an antitrust violation if the sales below costs in the competitive market were deemed to be predatory.[12] Consequently, we have at least two checks on the utility: the Public Service Commission's direct regulation and the in-

direct deterrent effect of the antitrust laws.

Regulator:

But some economists have asserted that "underpricing of competitive services is consistent with the normal pattern of price discrimination by a monopolist."[13] This sounds fairly serious, even sinister, don't you agree?

Professor:

First, the term "underpricing" is not defined precisely. Since it is not standard terminology, I am not sure just what that means. The term suggests pricing below costs. But the "normal pattern" of monopolistic pricing does not involve pricing below costs because that is not usually consistent with higher profits. Second, the suggestion of price discrimination is a bit hard to follow because it is in the context of a regulated monopoly position in one product and an unregulated competitive position in a second product. One cannot talk of price discrimination when one refers to different products. Price discrimination occurs when the price-cost ratios differ across customer classes. This makes no sense when different products are involved.

Regulator:

That sound quite nice in theory, Professor, but I have heard several reasons why underpricing is a sensible pricing strategy:

1) any "losses can always be recouped by increasing the price for those items where competition does not exist;"
2) "it will help hide any management deficiencies" that would be revealed by a lack of success in the competitive marketplace, and
3) it will prevent the "unwanted notoriety and regulatory scru-

tiny" that "failure in the competitive market will bring."[14]

Can you help me out with these suggestions?

Professor:

I certainly shall try. The first assertion depends critically upon a failure of the regulatory commission to carry out its responsibility to protect the utility's customers. If one starts with the assumption that the regulator will not do his job, then one should advocate an abolition of regulation not an increase in its scope. There is a respectable argument to be made that the regulator cannot do his job because of insufficient resources. In this case, asking the regulator to accept an additional regulatory task makes little sense. In any event, the assertion has little to recommend it. Suppose that the firm can, in fact, cover losses in one market with higher prices and profits in a second market. What would be the point? There is no gain for the firm and there may be foregone profits. For example, the firm presumably could earn the higher profits in the market where there is little competition and price sensibly where it is facing competition. In this way, the firm's profit would be higher than under some plan where it "underprices" in the face of competition.

The second point is based upon sheer speculation that the utility cannot compete successfully. Although this may be true, there is no empirical evidence to support this notion. Moreover, it ignores the easiest way of preventing any embarrassment: refusing to participate in the competitive market. Surely, no one would force the regulated telephone service company to compete in an unregulated, competititve market if it did not want to do so. Neither the shareholders nor the customers would benefit from compulsory participation. Consequently,

we should not expect the management to employ ridiculous pricing policies to hide its inability to compete.

The final point assumes enhanced "regulatory scrutiny" if the utility fails to compete successfully. There is no justification provided for the regulator's interest in this issue. It would seem irrelevant. As for "unwanted notoriety," one can only guess at what this means.

Regulator:

Professor, let me move on to some other issues. We have heard that problems arise when a telephone utility sells equipment (directly or indirectly) because it is difficult for customers to discern a difference between "buying the equipment from the utility or using the regular tariffed service." Is this a concern of the regulatory commission?

Professor:

This hardly seems to be much of a problem. If such a misconception provides the utility with a competitive advantage in the equipment market, competitors will find it profitable to inform the customer of the difference. We can rely upon the market incentives to handle this difficulty and not have to bother you regulators with it.

Regulator:

In fairnesss to other sellers of telephone equipment, shouldn't we be concerned about the telephone utility's unique competitive position within its own market area?

Professor:

It seems unlikely that this should be a regulatory concern. If you prevent the telephone utility from transferring costs from its equipment business to its service business, the equipment subsidiary will have no unfair advantages. Provided that you prevent unfair advantages, the

only way that a utility can achieve high monopoly profits on direct sales of terminal equipment when it faces competition from unregulated firms is if it is more efficient. In other words, the regulated firm's operations in the competitive market must involve lower costs. For example, a telephone utility's equipment affiliate may have lower distribution costs because it is "established" or "trusted." Customers know that the utility has an extensive, well-established, repair and maintenance operation and may prefer to deal with the utility's affiliate. It is also true that most telephone utilities enjoy the advantage of already having an established network of customer service and marketing offices. All of these "advantages" merely mean that the telephone utility is more efficient.

These advantages may mean that the pressure offered by rival sellers of telephone equipment will not drive the telephone company's profits to the competitive level. But society is not properly concerned about profits. To see this, suppose that one were to preclude the telephone utility's affiliate from selling telephone equipment. The result would be to raise costs in the sale of telephone equipment. Perhaps no remaining seller would enjoy excess profits, but society would be worse off as a result since costs would be higher and prices would certainly be no lower.

There is another competitive advantage that is unique to telephone utilities, namely that a telephone utility may have special knowledge of the customer's telecommunications requirements, advanced knowledge of customer interest in improved or expanded telephone systems, and so on. This would hardly seem to have a deleterious impact upon the consumer. It is possible that other suppliers of equipment may be disadvantaged. But this cannot be a serious problem because the customer has an in-

centive to explore all of his options. If the competitive equipment suppliers are promoting their products and the customers are looking out for their own welfare, then the telephone equipment affiliate will not be able to obtain sales at higher than competitive prices.

Regulator:

This is all quite helpful, but some have argued that in the direct sales of telecommunications equipment or services the telephone utility's activities necessarily fall within the scope of regulation.

Professor:

The logical consequence of this propositon is that regulation should extend to (1) the telephone equipment subsidiary and/or (2) the sales of services by the telephone utility to its subsidiary.

Regulator:

Well, to take them in turn, shouldn't we regulate all of the telephone equipment sales by the affiliate?

Professor:

The difficulty with this general proposition is best exemplified by a hypothetical situation. Suppose General Motors were to buy a small telephone company. Would you consider regulating all of the General Motors sales? I doubt that you would advocate such extensive regulation.

But I do not want to sound too glib. Even when we examine the more likely case of a true equipment subsidiary, one is arguing for regulating the telephone utility's affiliate when the affiliate must compete with unregulated firms. This would be rather burdensome for the firm and for you regulators since competitive reactions to changes in price, quality, terms of sale, terms of service, and so on could be quite

frequent. For example, suppose the sales price of a piece of equipment is specified by you regulators. If an unregulated competitor reduced its price, how would the telephone utility's affiliate respond? Suppose a competitor mounted a large advertising campaign, would the affiliate's similar expenditures be allowable and how long would it take to obtain a determination? For the regulated firm to remain viable, you would have to make decisions quickly enough to permit competitive reactions by the regulated firm. This is not a likely scenario. Consequently, I would conclude that you would have a difficult time regulating a firm that is operating in a competitive environment due primarily to the actions of the unregulated firms.

One could support the proposition that the equipment subsidiary should be regulated by focusing on two concerns - neither of which is really relevant. First, one could express concern over excess profits. But this concern is misplaced. If the telephone equipment subsidiary's excess profits are due to efficiencies, regulation will lead to prices that will not allow competitors to survive. If excess profits are due to something else, competition will reduce or eliminate them. In any event, the telephone equipment company cannot sell equipment at prices higher than those that are equivalent to the lease terms, which are subject to regulation. If it attempted to do so, no one would buy; everyone would lease.

Second, one could worry about regulatory "loopholes" that would permit the telephone utility to evade regulation. But that concern is founded upon the assumption that you regulators will fail to do your jobs. We discussed this earlier. If one is willing to assume this, then it escapes me why one would want you regulators to have greater auth-

ority and control.

Regulator:

I am beginning to get the picutre. Yet, it does seem legitimate that all services provided by the telephone utility to the affiliated firm should be regulated. Do you agree?

Professor:

Yes, of course. The affiliate should pay the full cost of providing those services and you should make sure that this happens. This will prevent the utility from shifting excessive profits in the regulated business to its unregulated affiliate via cost transfers. In addition, it prevents the affiliate from having an unfair advantage in the competitive equipment market. Finally, the utility's service customers benefit from the reduction in overhead costs, which will be reflected in lower service rates. This is consistent with the mission of the regulatory agency and should be encouraged.

Regulator:

The telephone utility can sell a variety of services to its equipment subsidiary: marketing referral services, repair and delivery services, and so on. One of our regulatory goals is to ensure that all services are provided on a nondiscriminatory basis without undue prejudice or advantage in favor of one particular party.[15] Should we require that the telephone utility offer these marketing, repair, and delivery services on the same terms to rival equipment suppliers?

Professor:

This would be a novel application of a sound regulatory principle. Its novelty derives from the fact that we are not referring to the sales of telephone services. Instead, we are referring to the administrative,

promotional, sales, and repair services that the telephone utility may sell to its equipment affiliate. The result of these sales to the utility's affiliate is to reduce the utility's total costs and thereby the rates of all service customers, which is why such sales should be applauded.

It does not follow necessarily, however, that the utility should provide marketing referral and other services to rival equipment firms rather than just to its affiliated equipment firm. The telephone utility's primary reason for existing is to provide telephone service. It provides these auxilliary services only incidentally. They should be subject to regulation only to the extent that we wish to prevent the diversion of profit from the regulated business to the unregulated business.

Your goal of preventing undue discrimination is important as it pertains to telephone services because the customer has no alternatives. With respect to marketing and other services, this is not the case. Rival equipment suppliers can produce their own marketing services. If the services of the utility's repairmen are desired by the affiliate's competitors, there is nothing to prevent those competitors from directly hiring such repairmen. Similarly, delivery trucks can be purchased and so on. In other words, markets work fairly well in most competitive environments and there is no apparent reason why they should fail here. In the absence of market failure, it is difficult to justify those services.

Regulator:

You conclude then that prohibiting all sales of equipment by telephone utilities would be socially inefficient.

Professor:

From what I have indicated earlier, it is obvious that I agree with

this point. To prohibit sales would benefit only those equipment companies that cannot compete with the telephone utility's affiliate. It would not benefit the service customer. In fact, to the extent that economies of scale go unexploited because services are not sold to the affiliate, the costs of providing telephone services will be higher and the rates paid by the service customers will be higher. To the extent that competition in equipment is reduced by the elimination of the affiliate, the price of equipment will tend to rise. Consequently, it should be quite clear that there is only one winner in this proposed solution: the unregulated equipment companies. Promoting their interests is not necessarily bad, but it surely is not a traditional concern of public utility regulation.

III. Final Remarks

The introduction of competition in the telephone equipment market is good. Competition prevents the resource misallocation associated with monopolistic pricing practices. In particular, competition pushes price down to the level of incremental cost at which point the private value of the commodity equals the social cost of providing the commodity. To the extent that the firm makes no excess profit on the sale of telephone equipment (due to the competition), other services cannot be subsidized. Recognition of this has led some state regulators to oppose competition in the telephone equipment market.[16] This was due to a desire to have basic intrastate services subsidized. This opposition is misplaced for two reasons. First, this sort of subsidization is not desirable because it distorts relative prices and provides socially incorrect signals to the consumer. Second, competition in the terminal equipment market does not seem to have caused any direct contribution losses.[17] Thus, the

introduction of competition into the telephone equipment market should be applauded on these allocative efficiency grounds.[18]

Competition has also resulted in superior innovative activity. Prior to the Carterfone decision, innovative activity was not terribly rapid due, in part, to the limited market enjoyed by third parties. The Carterfone decision changed all that since it opened the door to customer-owned attachments and equipment. Following Carterfone, competition in the provision of telephone equipment has resulted in a wide array of products for the consumer.[19] Moreover, there is not a shred of evidence that the telephone system's integrity has been impaired.

In summary, then, competition has provided uncontroverted benefits for the consumer. There is no basis for any restrictions on this competition. In particular, there is no reason to preclude telephone equipment affiliates of the telephone utilities from competing on the same basis as any other interconnect company. These affiliates should receive neither advantages nor disadvantages due to their affiliate status.

FOOTNOTES

*The author appreciates the financial support of the Public Utilities Research Center at the University of Florida. I have benefitted from the thoughtful comments of Sanford Berg. The views expressed in this paper, however, are not necessarily shared by anyone else.

[1]Hush-A-Phone Corp. v. FCC, 238 F2d 266 (D.C. Cir. 1956). This case involved the attachment of a speaker guard on a standard telephone to increase privacy. The FCC adopted the Bell system's contention that such a speaker guard endangered the integrity of the phone network. The court, however, rejected this finding.

[2] Carterfone, 14 FCC 2d 571 (1968). The Carterfone device permitted communication between a caller and someone who was miles away from the stationary receiver by linking the receiver to a radio. At first, the Bell system refused to acknowledge that the mobile radio-telephone device satisfied an unmet demand and would not cause engineering difficulties for the telephone system.

[3]The North Carolina Utilities Commission and the Nebraska Public Service Commission banned the interconnection of customer-owned equipment.

[4]This was decided in North Carolina Utilities Commission v. FCC (Telerent), 537 F.2d 787 (4th Cir. 1976).

[5]Citation for FCC decision.

[6]General Telephone and Electronics already has established such a subsidiary.

[7]A natural monopoly exists when marginal cost is below average cost at the output where marginal cost and demand are equal. Competitive pricing involves prices equal to marginal costs, which imposes losses

on all of the firms. If the economies of scale are large enough relative to market demand, then the process of competition eliminates all but one firm.

[8]This conclusion is not new. See C. G. Fenton and R. F. Stone, "Competition in the Terminal Equipment Market," Public Utilities Fortnightly, Vol. 98 (March 1977), pp. 25-30.

[9]The original contribution to a substantial literature by H. Averch and L. Johnson, "Behavior of the Firm Under Regulatory Constraint," American Economic Review, Vol. 52 (December 1962), pp. 1052-1069.

[10]This conclusion can be seen by examining Figure 1 below. The demand for telephone service is represented by D. The per unit cost

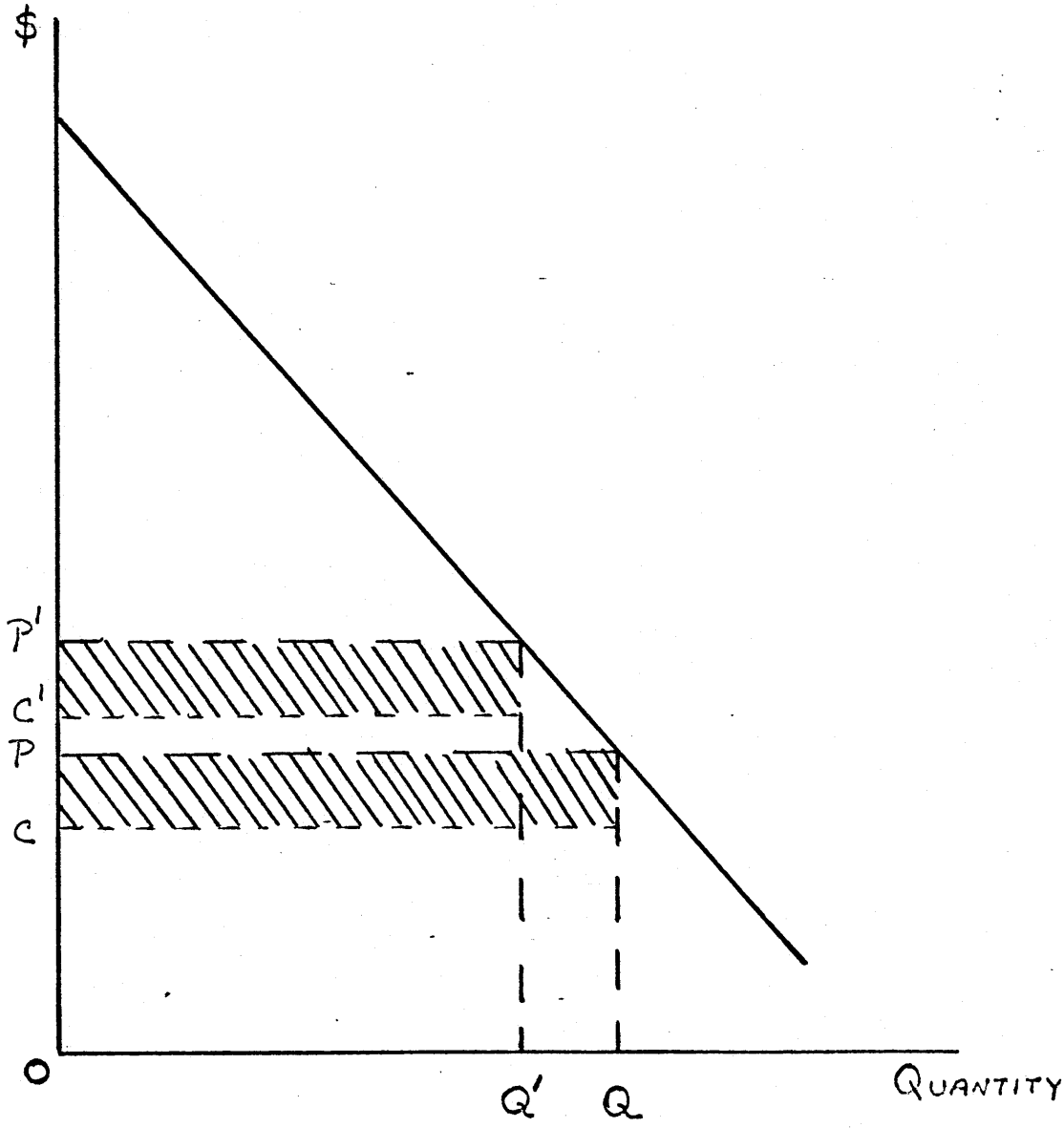

FIGURE 1

is C at a price and quantity of P and Q, respectively. Suppose that the costs are increased to C' by transferring costs (properly allocated to the equipment subsidiary) to the telephone utility. If price is raised to P' so that the new costs are fully covered, the profits on telephone services will decline. We can see this because the original profit was (P - C)Q and the new profit is (P' - C')Q'. Since (P - C) = (P' - C') and Q' is less than Q, profit must fall. The two profit rectangles are shaded in on the diagram.

[11] B. Johnson, "The Dilemma in Mixing Competition with Regulation," Public Utilities Fortnightly, Vol. 100 (February 1979), pp. 15-19, at p. 17.

[12] Predatory pricing generally constitutes a violation of Section 2 of the Sherman Act, which holds in relevant part that "Every person who shall monopolize, or attempt to monopolize...any part of the trade or commerce among the several States...shall be deemed quilty of a felony...." For a discussion of the proper pricing of terminal equipment, see A. E. Kahn and C. A. Zielinski, "Proper Objectives in Telephone Rate Structuring," Public Utilities Fortnightly, Vol. 97 (April 1976), pp. 20-23.

[13] See Johnson, supra, note 9 at p. 18.

[14] Ibid., pp. 18-19.

[15] For a discussion of this as a goal, see J. C. Bonbright, Principles of Public Utility Rates (New York: Columbia University Press, 1961).

[16] Some discussion of this resistance can be found in A. E. Kahn and C. A. Zielinski, "New Rate Structures in Communications," Public Utilities Fortnightly, Vol. 97 (March 1976), pp. 19-24.

[17] See Fenton and Stone, supra, note 8 at page 29.

[18]Of course, competition from the interconnect companies necessitates some alteration in the rate structure. This is explored by Kahn and Zielinski, supra, note 16.

[19]For a summary statement of the evidence on this point, see Fenton and Stone, supra, note 8 at page 26.