

10. Deregulation of Long-Distance Telecommunications

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1. INTRODUCTION

There is a growing awareness that the long-distance (inter-LATA) telecommunications market should move to a fully competitive, unregulated status, with the availability to all providers of long-distance services of equal access to local (intra-LATA) networks. In the unregulated end state, competition would provide protection for customers against excessively high prices, and the antitrust laws would provide protection for competitors against predatory prices.

However, during the next several years it may be perceived that AT&T's interexchange entity (ATTIX) will still hold some monopoly power in some markets, and some transitional regulatory rules might be desired.¹ In this paper we outline a possible transition to deregulation, characterized in part by an initial abandonment of traditional rate-base rate-of-return regulation by category of service, which would be replaced by a widening band of acceptable prices for core services, supplemented by market rules dealing with resale, interconnection, entry and exit, etc.

Although ATTIX still holds a significant share of the long-distance market, and a large fraction of current long-distance capacity, its competitors have not insignificant market shares on many of the denser routes, and these shares are growing very rapidly. It seems clear that, with the advent of equal access, ATTIX must meet the prices of its most efficient competitors or be driven out of the market. Furthermore, competition is and will be taking place increasingly in the form of the introduction of new features and services, and with free entry into these markets ATTIX will have no monopoly power other than the usual transitory advantages associated with "Schumpeterian competition" in industries with rapid technical change.

Nevertheless, with the current overall market share of ATTIX as large as it is, it seems unlikely that the FCC would decide to move abruptly to total dereg-

* The views expressed here are those of the authors, and do not necessarily reflect the views of AT&T Bell Laboratories. This paper was delivered in April 1983. Since then, divestiture has occurred, and the regulatory situation has changed in many ways. Names have also been changed; for example, "ATTIX" is now "AT&T Communications." We have not attempted to reflect these changes in the present version.

ulation of the long-distance market in the near future. Indeed, a "flash-cut" approach at any date has serious drawbacks, creating sharp discontinuities in the environments of all of the interested parties. (See Section 2.5.) We have therefore been led to outline a gradual (but not slow) transition to deregulation that would protect customers against short-run overall increases in ATTIX prices for core services, promote the entry of efficient competitors into the long-distance market, and provide ATTIX the incentives to introduce new and improved features and services. The one "flash-cut" feature of our outline is that rate-base rate-of-return regulation by service category would be replaced at the beginning of the transition by upper and lower bounds on the prices of core services (essentially currently available voice-grade services of the public switched network). These bounds would be chosen to protect customers and promote entry during the transition, as indicated above, but would evolve during the transition so that the range of "reasonable prices" would become progressively broader as the industry approached the unregulated end-state.

In preparation for our attempt to outline a deregulatory transition we made a survey of the range of regulatory alternatives available to the FCC. The "space" of regulatory alternatives is very large indeed, and we do not have the space here to review this part of our work. We did draw some conclusions from this analysis, however, and we briefly review those in Section 2. In Section 3 we present our outline of a transition to deregulation, and in the last Section we offer some concluding remarks.

(The hurried reader may wish to skip Section 2 and go directly to Section 3. However, a reading of Section 2 should clarify the reasons for proposing the policy outlined in Section 3, and the advantages and disadvantages of that policy in comparison with some alternative policies.)

2. GENERAL CONSIDERATIONS REGARDING REGULATION AND DEREGULATION

2.1 Introduction

In the past the goal of telecommunications regulation might have been summarized as "universal, reliable telephone service at reasonable rates." Since the telephone network was regarded as a natural monopoly, for technological reasons, and since the attainment of universal service required a continuing investment to keep up with the growing numbers of potential residential and business customers, a regulatory strategy was needed that would simultaneously protect customers from monopoly exploitation and attract the new funds needed for investment. The principle of rate-base rate-of-return (R/R) regulation was developed and applied to meet this need.

More recently, because of technological advances, long-distance telecommunications has lost much of its natural-monopoly character. In addition, technological advances have led to a new goal of regulatory policy: stimulating

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the introduction of new telecommunications services and new services that combine telecommunications and computing. In these new circumstances, regulatory policy has been evolving away from regulated monopoly and towards the promotion of competition. This shift in policy has made the R/R principle increasingly unworkable, and has led to a search for alternatives to the present methods of regulation.

One alternative to the present system is complete deregulation of long-distance telecommunications. However, as noted in the previous section, although new entrants in the industry are rapidly expanding their capacity, the FCC is unlikely to implement complete deregulation during the next year or two. We are therefore led to a search for alternatives to the present system of R/R regulation that would promote a satisfactory transition to deregulation in a reasonable period of time. We must keep in mind, however, that we are searching for alternative *methods*, not alternative *goals*. We take the current goals of public policy to be: (1) the promotion of innovation and, as a means to that end, competition²; (2) the maintenance of universal existing "core" services at reasonable rates; and, by implication, (3) the control of any transitional monopoly power that ATTIX might have in the provision of existing "core" services. In the present section we shall sketch some regulatory (and deregulatory) alternatives for a transition, and evaluate them in the light of these policy goals.

2.2 Who Offers What

The Commission may have a policy, with respect to particular markets, of:

- protecting monopoly (if the monopoly is "natural," it doesn't need protection), or of
- allowing entry (as in the case of private line services), or of
- stimulating entry (as in the case of relaxed rules for other common carriers (OCCs)).
- The Commission may require certain firms to offer certain services (e.g., not allow exit), and it may
- allow resale and sharing (of basic MTS, WATS, and private line services).

A crucial aspect of Commission policy on what ATTIX will be allowed to offer is its interpretation of the concept, "new basic service" (to be unregulated); this interpretation could be narrow or broad.³ It will usually be in the interest of customers, and of ATTIX as well, that this interpretation be broad. We note that rivalry among firms is apt to manifest itself as an argument over whether a particular service offering is "basic" or "enhanced."

If the Commission has a liberal policy with respect to *exit* (i.e., discontinuance, reduction, or impairment of service,⁴ in the language of Section 214 of the Communications Act), such a policy will tend to encourage entry. Section 214 also requires Commission approval for new construction. Approval could

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be made easy or difficult to obtain; it could be made difficult for the dominant firm and easy for non-dominant firms. (Here and elsewhere we use the word "dominant" in the FCC sense). These are some of the ways in which a Commission could try to bring about the deconcentration of the industry, but there are others.

It is a further important aspect of regulation whether the dominant firm has a common carrier obligation to serve all comers, and how this obligation is interpreted. The argument for relieving ATTIX of this obligation with respect to a particular service will gain force as the ATTIX's monopoly of that service (somehow defined) weakens. Perhaps relief from this obligation should keep pace with the process of price deregulation.

This question of the common carrier obligation to serve is related to the matter of de-averaging. That is, if they are permitted to charge compensatory rates for service on high-cost routes, then both the dominant carrier and its competitors will be willing to provide this service, and no one will have to be forced to do so. We shall take up this matter again below.

2.3 What is Tariffed

Within the set of services a firm is allowed to offer, the Commission must specify which services are to be tariffed (or otherwise regulated) and which are not. This distinction may not be all-or-nothing, as our discussion of pricing (Section 2.4) will make clearer. Roughly speaking, when we say that a service is "untariffed" (or de-tariffed) we shall mean that, *for practical purposes*, the firm does not have to file and justify in detail specific numerical values of prices or price ranges. This is not inconsistent with the Commission retaining regulatory oversight of such services in some general fashion. Thus one regulatory alternative is for a service to be "de-tariffed" but not "deregulated".

For those services that are tariffed, the Commission must specify the *level of aggregation* of the pricing rationale which the firm must supply and the Commission must accept. This aggregation can range from the whole firm, if all of its services are tariffed (i.e., the Commission can specify something about rate of return, or about a price index, for the whole firm), to justification of each rate-element.

In the case of R/R regulation, disaggregation of rate justification entails arbitrary allocation of joint and common costs. Aggregation on the other hand, may entail fear of cross-subsidy; it is not clear the means exist to alleviate these fears completely. Kelley says, with some justice, "the nature of the common cost problem together with the sophisticated and rapidly changing technology [he is thinking of the burden on the FCC] simply make the textbook process of rate-of-return regulation unfeasible" (Kelley, 1982). Similar views seem to be implicit in the Commission's language in Dockets 79-245 and 79-246.

Which services should be regulated, (or tariffed) and when should a service be deregulated? We give a very partial answer.

1. *New Services.* New basic services should not be regulated, even if the dominant firm introduces the service first, and thus automatically starts out with 100% of the market. The new service cannot be essential or necessary (unless it entirely replaced some existing essential service), since it did not exist until "this moment." It is in no way the job of regulation to control the prices of infant innovative nonessential products. Thus, for example, it is our view that packet switching should not be regulated, or at least not tariffed.
2. *Existing Services.* When should an existing regulated service or set of services be de-tariffed or even deregulated? In principle, when the dominant firm's optimal (profit-maximizing) policy would not succeed in extracting monopoly rents (except for those temporary "Schumpeterian" monopoly rents attendant on new product innovation), i.e., when it could not continue to maintain price much above cost. Such a market is called *contestable*. How can one test for contestability? In practice, the time may be ripe for deregulation of a given service when the dominant firm is losing market share (for this service) *at a substantial rate*, and/or when an independent study shows that the competitors are not essentially capacity-limited.

Even if a market is contestable, the regulators may wish to promote further entry, or further growth of existing smaller competitors, either in order to promote actual (as distinct from potential) competition, or simply to protect the interests of existing smaller competitors.

These considerations lead us to the conclusion that, during the transition, the existing long-distance services that should continue to be tariffed (actively) are voice grade switched services, corresponding, for example, to the current MTS and WATS, or subsets thereof. We shall call these the *core services*, but we shall not attempt to specify them precisely in this paper.

2.4 Pricing

2.4.1 General Considerations. Although a basic principle underlying the Communications Act of 1934 seems to be that tariffs of common-carrier services are carrier-initiated, practical implementation of tariff regulation requires that the Commission give the carrier some idea *ex ante* about what tariffs are going to be acceptable, or what criteria are going to be used to determine the acceptability of tariffs. This need not preclude tariff flexibility within a "reasonable range."

Thus, at a given moment of time, the firm may be free to choose a price within some specified range, say between p_{min} and p_{max} . (If $p_{min} = p_{max}$, then the price is completely set, the firm has no flexibility.) The range may be given for a whole time interval, and it may be:

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- a function of time only or a function of other parameters also. (E.g., a function of the CPI. This could be done, for example, in such a way as to require that the "real" price constraints be constant.)

Slightly more generally, the Commission could define two or more nested price ranges, such that movement within the inner one required less Commission consideration, and could occur more quickly, than movement into the outer regions.

Prices are normally specified in nominal terms, i.e., in current dollars. With the persistence of inflation there is increased awareness of the need to take into account in some systematic way the variations in the general price level, or in the prices of relevant inputs. In other words, there is an increased awareness of the importance of measuring prices *in real terms*. Thus, the choice of the formula for transforming nominal prices into real prices has become an aspect of regulatory alternatives.

It is often useful to try to distinguish between the regulatory pricing rule and the rationale for that rule, although in some cases this distinction may be difficult to make in practice. In the final subsection of this section we discuss some alternative rules and rationales.

2.4.2 Nonlinear Pricing. We have so far spoken as if a customer who purchases q units of some rate element (so to speak) provides a revenue equal to p times q . Other arrangements are conceivable, however, such as bulk discounts. In theory, nonlinear pricing can lead to greater social welfare than linear pricing, so one might suppose regulators would favor it. However, nonlinear pricing can implicitly discriminate among users with different demand functions (e.g., by charging lower average prices to those with higher demands).

2.4.3 Resale and Sharing. If the regulatory rules and the available technology permit costless resale, then a nonlinear pricing schedule cannot be maintained: it is in the interest of a middleman to buy up a large quantity of the rate element at a low price and resell it at a profit. Under these circumstances, the firm will not wish to offer bulk discounts. A similar result will ensue if small users are all allowed (and able) to pool their demands and purchase service at the low bulk rate.

To the extent that the costs of resale and sharing differ from zero, it will be possible to maintain pricing nonlinearities.

2.4.4 Averaging and De-averaging. The dominant firm may be required to charge the same for a call of the same distance, duration, and time of day, even though the cost (to the extent it is defined) of such a call may vary, depending

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for example on the actual route and on the volume of traffic between the two points. This is averaging; it invites cream-skimming, i.e., entry on the low cost routes. "Cream-skimming" is not a pejorative term; however, to require averaging by one firm, while allowing entry by others, is a questionable regulatory practice, on both equity and efficiency grounds.

2.4.5 Subsidy. It may be a social objective to price certain rate elements or services below cost, e.g., local residential access to the network. In a monopoly situation, such preferred services (which imply preferred groups of customers) can be subsidized by other services. In a thoroughly competitive situation, they cannot be subsidized, for market reasons. In a mixed competitive-monopoly situation, they cannot, because the dominant firm's competitors will use political means (accusations of predatory pricing) to prevent it. Thus, if it is still desired to prefer certain rate elements or services, the subsidy will have to come from another source: the entire industry, the Federal government, etc.

2.4.6 Rules and Rationales. There are an infinite number of kinds of rules for setting prices. Almost all of these have never been considered, and never would be considered by a rational person. We mention the two plausible kinds of rules that appear to us most relevant to the present problem.

Rate of return regulation. One can specify a price (or price interval) by deriving it from an allowed rate of return (or rate of return interval) on capital. This is the conventional method. It can be applied by service categories, or for the entire firm. If it is applied by service categories, then, as mentioned above, it entails arbitrary cost allocation, and also a debate (essentially bargaining among interest groups) which accompanies such allocation. If it is to be done precisely, R/R regulation also requires knowledge of the price-elasticities and cross-elasticities of demand, and of the dependence of cost on the output vector. The presence of competition of course affects the demand elasticities experienced by the firm, and (as previously mentioned) the presence of unregulated competition makes it more difficult for the Commission to obtain the data it needs for R/R regulation.

R/R regulation is both a regulatory policy and a rationale for that policy.

Price-Range Regulation. The idea here is to give the firm maximum flexibility to price those of its services that are still tariffed, consistent with "fair" treatment of its customers and its competitors.

Price is required to be within a time-dependent interval, say between $p_{min}(t)$ and $p_{max}(t)$. To protect consumers, the firm agrees to keep the price *low enough*: for example, $p_{max}(t)$ might start at the present price and remain constant in real terms. The initial transitional lower bounds on prices, $p_{min}(t)$, might be set so as to permit entry by efficient competitors.

Price-range regulation has several advantages over R/R regulation in a transition period during which some services are tariffed and some are not. First, it eliminates the arbitrary and increasingly difficult allocations of joint costs be-

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tween tariffed and untariffed services, and among tariffed services. Second, it addresses more directly the concerns of the various interested parties. Third, it provides correct incentives for productivity improvement, since the evolution of the price ranges, once fixed by the regulators, is beyond the firm's (or firms') control.⁶ On the other hand, R/R regulation aims at setting price equal to cost (including the cost of capital), which in itself provides no incentive for the firm to reduce cost, especially in times of inflation when rate hearings are frequent.

If the initial lower bounds on prices were to be set so as to promote entry, some cost information would be needed. This problem is discussed in Section 3.

2.5 Dynamics

The dynamics of the transition may not appear to be comparable to the other "dimensions" of regulatory alternatives that we have discussed in the preceding sections. Furthermore, we have already touched on several sequential aspects of regulatory alternatives, for example, when we pointed out that price ranges may vary over time according to some prescribed pattern, or when we discussed criteria for transforming a tariffed service into a de-tariffed one. Nevertheless, it is convenient to gather together under this one rubric several important aspects of the transition that are concerned with its dynamics in one way or another.

Rather than examine all of the theoretically possible transition paths—which would in any case be a foolish exercise—we shall sketch here three possible general approaches to the transition problem.

The first general approach would be to continue the present regulatory policies until such time as ATTIX demonstrates to the satisfaction of the FCC that it no longer has significant market power in any of its (important) markets. At that time, ATTIX could be deregulated across-the-board. We might call this the *flash-cut* approach. In this form, the deregulation would be a radical discontinuity for all of the participants, which would make it less likely that it would ever be adopted (although the recent settlement of the Department of Justice antitrust suit shows that radical discontinuities are possible).

A second approach would focus on the successive deregulation of "services", defined primarily with reference to market segments. This would enable the Commission to take small steps tailored to the perceived changes in ATTIX's market power in a sequence of submarkets, and each step could affect a relatively smaller number of customers and competitors. On the other hand, this approach would encourage the partition of ATTIX offerings into smaller "services" bearing less and less relation to the evolving structure of the technology of production. If this approach were combined with a continuation of R/R rate justification for each service that remained regulated, the difficulties of cost allocation would become insurmountable. Furthermore, because of relatively free entry, ATTIX would face competition in its more profitable markets, and would be forced to remain the sole provider in the other markets under unfavorable conditions. We might call this the *salami* approach.

In the next section we describe a third approach to the transition, which is organized around price-range regulation of core services.

3. A POLICY FOR THE TRANSITION

In the present section, we give our current views on how a transition to deregulation of the interexchange market should proceed, and indicate how this proposal might be grounded in deregulatory history.

The policy outlined below should be adopted "all at once" and as soon as possible. As will be explained, *all-at-once* adoption of the policy is consistent with *gradual* deregulation. Furthermore, deregulatory steps should occur according to a fixed calendar, rather than triggered by events (such as the achievement of certain market shares), because the latter mechanism would be subject to unproductive "gaming". The burden of proof should be on those who would slow things down.

3.1 What Is Tariffed

Core services should be regulated (with decreasing stringency—see below) during the transition. By core services we mean a minimum set of services or components of services in which monopoly power may be thought to reside. This minimum set might initially just be switched voice-grade transport.

All other services existing at the beginning of the transition period should be deregulated⁷ at that time. By this we mean:

1. Services that do not involve the core services would be deregulated;
2. "Differentiated" services, consisting of core services plus added "features and capabilities"⁸ would be priced so as to reflect the "transfer cost" of the core component.
3. New services, introduced after the start of the transition period, should be unregulated (except, of course, if they are direct functional replacements of preexisting core services).

3.2 Pricing

Price regulation of core services during the transition to deregulation would not be on a rate-base/rate-of-return basis, but would consist of setting upper and lower price bounds, p_{max} and p_{min} , as discussed in Section 2.4. Thus arbitrary allocations of common costs would be avoided.

The function of p_{max} would be to protect ATTIX customers from the abuse, or alleged abuse, of monopoly power. For example, p_{max} could be equated, *in real terms*, to the existing price as of the beginning of the transition period.

The function of p_{min} would be to permit the entry of efficient carriers (other common carriers—OCCs, specialized common carriers—SCCs) in the interexchange market. We describe this in more detail below.

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As mentioned above, the policy we are proposing should be adopted all at once. That is, rate-base rate-of-return regulation should be abandoned all at once. For if it is not, then arbitrary allocations of joint costs will have to be made between regulated and unregulated services; these allocations will be subject to political pressure, and to accusations that costs have been allocated so as to permit cross-subsidy and hence predation. For this reason, it is not desirable to abandon present regulatory methods on a segmented, service-by-service basis.

The notion of setting upper and lower price bounds is familiar from railroad and airline experience. Price deregulation is then achieved by allowing the range to broaden, according to a calendar schedule, until the constraints are no longer binding, that is, until:

- one relies on competition as a safeguard against the abuse of market power.
- one relies on the antitrust laws as a safeguard against predatory pricing.⁹
- We can describe in a little more detail the process of setting and expanding upper and lower price bounds. For example, p_{min} and p_{max} might initially be set equal to the present price, or some agreed-upon base price, plus or minus a small percentage. (This includes the possibility of setting p_{min} and p_{max} initially equal.) These bounds should then be widened until p_{min} hits the antitrust floor, at or before the time that price regulation ends.

As to the pace of deregulation, i.e., as to the speed with which the bounds on prices of core services should be widened, we can make the following points:

1. Deregulation should occur slowly enough to provide efficient competitors with the opportunity to obtain a viable foothold. (More precision than this would require gathering information on the growth capabilities of actual and potential competitors.)
2. Deregulation should not be complete before ATTIX and its competitors realize MFJ-mandated (Modified Final Judgment) equal access.
3. Deregulation should occur fast enough that everyone concerned can reasonably expect the process to be completed before politics and personnel change so much as to bog it down or reverse it.

All this sounds (roughly) like a five-year interval.

3.4 Further Details on Pricing

The situation is less simple than the above description might make it seem, in two ways. First, we have said that "the initial p_{min} should be set high enough to permit entry." But whether entry is possible or not depends on the costs of the

potential entrant. Since it is contrary to the social interest to encourage inefficient entrants, the costs in question should be those of an efficient potential entrant. However, ATTIX may still have a cost advantage because of scale effects. If a social policy were adopted to encourage entry even in this case, p_{min} would have to be set so as to render an entrant smaller than ATTIX (but not tiny) viable.

The other essential complication, with respect to p_{min} , arises from the existence of joint and common costs; it turns out that this problem is not entirely eliminated after all when we discard rate-base/rate-of-return regulation.

PSN prices are disaggregated in a natural way by route, and by time-of-day and day-of-week. Let us suppose that this disaggregation will persist, somewhat as at present, during the transition. The problem becomes particularly clear when we consider minimum time-of-day prices on a particular route. A potential entrant will enter that route, if at all, not for evening traffic only but for all times of day. The entrant's viability will depend not on a particular ATTIX price, but on the vector of ATTIX prices for that route. That is, there will be many sets of day, evening, and night ATTIX prices for which the (efficient, rather small) competitor is barely viable.

How can regulation specify p_{min} —now a vector—in this case? Several possibilities suggest themselves; these are illustrated in Figure 1 for the simplest case of the two prices, p^D (for day) and p^N (for night). In this Figure, the curve AB represents the break-even contour for a competitor; at any point above this curve, entry is feasible. The possibilities are:

1. Constrain each price individually; thus confine ATTIX to the shaded region. This is simple, but precludes ATTIX from many price-pairs that would permit entry, e.g., the point Q.
2. Constrain a price-index. This is like constraining ATTIX to the region above the line ND. (Clearly some additional constraints are needed on the individual prices.)
3. Constrain only some (perhaps the least elastic) price components; e.g., constrain only p^D , and deregulate night service initially, so that all price-pairs to the right of the line EF would be permitted.

All these methods (and no doubt many others exist) have their infirmities; however, these infirmities become less weighty when one recalls that any system of constraints will be relaxed with time, eventually opening the whole price space to ATTIX, except insofar as it (like any other business) is constrained by competitive pressures and antitrust law.

3.5 De-averaging, Entry, and Exit

It would appear to be a logical concomitant of the deregulatory process that ATTIX be allowed to de-average pricing by routes, or by market segments defined by other variables¹⁰. This de-averaging should occur gradually according to a calendar schedule.

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4. CONCLUSION

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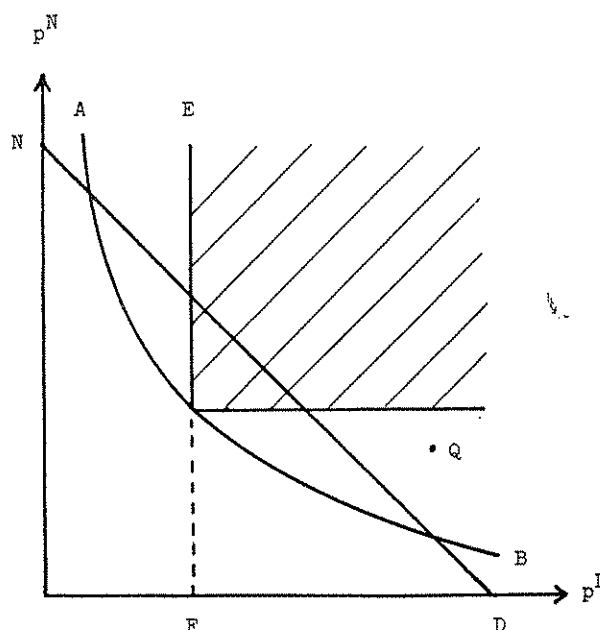


FIGURE 1.

If certain long-distance (inter-LATA) routes are felt to be unprofitable, so that no long-distance carrier wants to serve them, then (since long-distance telephone service is felt to be essential, although less so than local service) service on these routes should receive a direct government subsidy. The long-distance carriers could then bid for a franchise on these subsidized routes. Here too the airlines have set a precedent.

4. CONCLUDING REMARKS

In this paper we have outlined a plan for a transition to complete deregulation of interexchange services. This plan relies on direct price-range regulation of core services, together with market rules regarding resale, exit and entry, etc., during the transition period. The transitional price-range regulation would replace traditional rate-base rate-of-return regulation by service categories, and thus would avoid the morass of cost allocation in a market that would be only partly regulated.

We have sketched how direct price-range regulation of core services can be done so as to take account of the various "stakeholders": interexchange customers, AT&T shareholders, and efficient competitors of AT&T's interexchange entity. We have also stressed that this kind of transition has good incentive properties if it is carried out according to a fixed calendar.

"Core services" correspond to those existing interexchange markets in which AT&T historically has had regulated monopoly power, and in which it

may be perceived that AT&T would continue to have some significant monopoly power during the transition period. Although further work will be needed to define core services precisely and practically, in our view they should be confined to some subset or variant of existing voice-grade public switched services.

Further work will also be needed to develop the details of the price-ranges for core services, especially with regard to the appropriate degree of disaggregation of price constraints and the appropriate manner in which de-averaging may evolve.

However, this further work need not be so long or arduous as to significantly delay the beginning of the transition. Indeed, from an economic point of view, it would be appropriate to begin the transition to deregulation as soon as the Bell operating companies have been divested from AT&T, and the transition could well end with the achievement of MFJ-mandated equal access.

FOOTNOTES

- ¹ This paper deals with this perception (on the part of some customers or commissions) that ATTIX holds monopoly power. It does not require us to address the accuracy of this perception, the real existence of, or extent of such power during the deregulatory transition. We do note, however, that market share alone is clearly *not* a measure of market power.
- ² Many people believe that competition promotes innovation. Scientifically, it is not known what industry structure is best in this regard.
- ³ According to Computer Inquiry II, ATTIX may offer new "basic" services, but not "enhanced" services.
- ⁴ We do not, when we say deregulation, necessarily have in mind an absolute and final act. The Commission may simply choose not to exercise its control over prices.
- ⁵ See Kelley (1982), p. 99.
- ⁶ See Linhart and Sinden (1982).
- ⁷ In the sense that the FCC would not be involved in setting prices.
- ⁸ See Telecommunications Digest, 12/14/82.
- ⁹ Of course these two issues are tied together. If there are no monopoly profits, then there can be no predation, since the losses from predatorily pricing below cost cannot be recouped.
- ¹⁰ The regulated price bounds for core services, for example p_{max}^0 , could be defined as averages over routes, and could be restricted while gradual de-averaging occurs.

REFERENCES

- Kelley, Daniel. (1982). "Deregulation after Divestiture: the Effect of the AT&T Settlement on Competition," FCC Office of Plans and Policy Working Paper #8. (April). Washington, DC.: FCC.
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