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Federal Communications Commission
Office of Secretary

Ex Parte

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

DOCKET FILE COPY ORIGINAL

Re: CC Docket No. 96-98, Implementation of the Local Competition Provisions in the Telecommunications Act of 1996

Dear Mr. Caton:

Please be advised that the attached information is being sent to Joseph Farrell, Chief Economist at his direct request. Please associate the attached information with the above-referenced proceeding.

Please direct any questions regarding this subject matter to the undersigned.

Sincerely,

Sandra L. Wagner

Attachment

cc: Joseph Farrell

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Introducing Competition into Local Exchange Markets

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Introducing Competition into Local Exchange Markets

Abstract

This paper describes a dramatic plan to deregulate intrastate telecommunications which could be enacted into law in Kansas within the next year. The essential nature of this approach is the complementarity among its different parts; two actions are complementary if doing more of one increases the gain from doing more of the other. This paper explains how the parts of this proposal mutually support each other, providing an integrated plan for intrastate telecommunications deregulation. Plans that ignore this complementarity cannot take advantage of the reinforcement effects between different parts of a plan.

Introducing Competition into Local Exchange Markets

Introduction

This paper describes an approach to telecommunications deregulation which has been proposed in one state, Kansas, and which probably will be acted upon by the State Legislature within the next year. We believe this approach is unique in its comprehensive--yet simple--approach to intrastate regulation. This paper explains how the parts of this proposal mutually support each other, providing an integrated plan for intrastate telecommunications deregulation.

The new element in this plan is the explicit recognition of complementarity among its different parts. Two actions are complementary if doing more of one increases the gain from doing more of the other (Milgrom and Roberts, 1990). This is a precise definition, but it does not rely on continuity for its proof. It therefore can be applied to qualitative approaches as well as differentiable functions. This is what we do here.

The paper starts with an application of complementarity to local telecommunications. It then describes the physical, political and economic environment in Kansas; the structure of the Kansas telecommunications industry; and finally the proposal itself--including its rationale and expected implications. Complementarity is the glue that binds the different parts of the proposed deregulation plan together.

I. Approach

There are several problems that deregulatory policies in state telecommunications are designed to solve. The principal ones are to maintain universal service in sparsely settled, rural areas, to stimulate the development of new services and allow access to them by all, and to create a "level playing field" for competition. These goals are made peculiarly difficult for two reasons. Telecommunications prices often are unrelated to costs, which are in turn very difficult to define, much less measure, except in aggregate; and there is an enormous investment in fixed capital that has been only slowly depreciated under regulation.

Problems of pricing and problems of competition and stranded capital typically have been treated separately. Mitchell and Vogelsang (1991), for example, provide a far-ranging survey of pricing theories and techniques with almost no reference to conditions of entry. There has been a great deal of activity as states struggle with the problems of transition from monopoly to competition in telecommunications. The National Association of Regulatory Utility Commissioners, NARUC, periodically issues a report summarizing these activities (NARUC, 1995). The format of this NARUC scorecard also illustrates the prevailing view of telecommunications regulation. Each category of regulation is discussed separately. No space is given to the interaction between, say, the terms of resale and the viability of local competition.

An integrated approach offers a better chance of success

for the entire program. This is because there are inter-relationships among different telecommunications policies. For instance, policies designed to deal with universal service have implications for level playing fields, and vice versa.

Milgrom and Roberts' formulation of complementarity provides a useful tool for analysis of these interactions. Their definition of complementarity does not depend on continuity or differentiability of functions, and it can be applied to the choice of discrete policies. It provides a precise meaning to the concept that a group of policies can be more effective than considering the effect of each one in isolation would have led one to expect. The mathematics involved has been described in several places and will not be repeated here (Milgrom and Roberts (1990), Milgrom and Roberts (1995), Holmstrom and Milgrom (1994)).

The application of complementarity to intrastate telecommunications can be seen by examining the interactions among the following policies:

1. Introducing incentive regulation,
2. Creating a Universal Service Fund,
3. Starting new pricing plans from existing prices,
4. Allowing local competition,
5. Deregulating most prices.

Five polices create 20 simple interactions and more multiple ones. It would be excessive to describe each one in turn. Instead we will describe a few interactions, showing how

the adoption of one policy will make another policy more effective in the achievement of the goals outlined above.

For example, introducing incentive regulation makes allowing local competition more effective. It eliminates the incentives for cross subsidies that exist under rate-of-return regulation and that can threaten the viability of competition. It therefore promotes the desired level playing field for competition. Similarly, allowing competition improves incentive regulation by providing incentives for the existing carrier to preserve standards in dimensions not covered in a price-cap formula. Service quality is hard for a regulator to monitor, but a carrier that allows its service quality to deteriorate in a competitive environment will find its business slipping away.

For another example, allowing local competition interacts with deregulating most prices. Clearly competition enhances a policy of deregulating prices, for any company that tries to raise prices will find competition eroding its business. We do not mean to assert that competition will work wonders in all markets at all times, only that competition makes deregulation of prices more effective in assuring consumers access to all telecommunications services. Similarly, deregulating prices enhances competition by providing an environment that allows companies to interact according to the market rather than regulatory procedures.

Finally, in this partial list, consider the interaction between a Universal Service Fund and the starting prices for an

incentive regulation plan. Since subsidy mechanisms such as universal service funds are never efficient, a universal service fund can be said to work best when it is as small as possible. The principal alternatives for selecting initial prices are to use current prices, or to establish new prices based on costs. If the latter alternative is selected, cost studies of all relevant services must be performed. If this is done, we can predict two consequences from recent history. First, there will be extensive controversy and litigation, delaying the implementation and hence reducing the effectiveness of all other policies (Temin, 1987). Second, almost any concept of costs will show rural service to cost more than is currently being charged. Since rural rates cannot be set at such high rates and still preserve universal service, then a larger Universal Service Fund will be needed to preserve rural universal service. The fund will be more expensive for a given result, that is, less efficient.

Similarly, the existence of a Universal Service Fund makes starting from existing prices more attractive. The push for cost-based prices comes largely from aspiring competitors in intrastate markets. They are not now taxed to provide universal service, but they almost certainly would be to support a state Universal Service Fund. The closer prices come to costs, the larger their contribution to such a fund will be. This realization should dampen their enthusiasm for cost-based prices, but it does not yet seem to have had that effect. While

realization of this implication will not eliminate the case for a wholesale price revision, it makes the alternative of starting from existing prices less of a burden.

This is hardly an exhaustive list, and it does not deal with many of the problems that arise in making policy at the state level. It is designed to show how the concept of complementarity can be applied in this area. And it answers some general questions that can be raised about the plan presented here. More detailed discussion of the proposals will be presented below.

II. Kansas - The Environment and the Telecommunications System

Kansas is a large, sparsely populated state in the center of the United States. The eastern third of the state contains three metropolitan areas of modest size--Wichita, Kansas City, Kansas, (really a suburb of Kansas City Missouri, which is much larger) and Topeka, the state capital. The remainder of the state, which contains about half the population, is made up of small cities, towns and rural areas The western half of the state is fairly arid, and supports some wheat farms and grazing animals. Its population density is extremely low, amounting to less than four people per square mile in some areas.

Aside from agriculture, there is a substantial aircraft manufacturing industry in Wichita, and there are two major universities, the University of Kansas and Kansas State. The rest of the economy is mixed, with no particularly strong

manufacturing or service base.

Table 1 shows data on Kansas disaggregated by region. Kansas is rectangularly shaped and the six regions divide the rectangle more or less symmetrically They are ranked in the order of their population density, which varies enormously from the densely populated areas around Kansas City in the Northeast to the extremely sparsely populated regions in the West. It is noteworthy that the western regions are not poorer than the others on average.

Table 2 shows what has been happening over roughly the past decade. Listing regions in the same order as in Table 1 shows that the sparsely-populated regions are losing population and jobs while the populous regions are gaining them. In other words the dispersion of population densities shown in Table 1 is getting wider.

This exposes a policy dilemma for telecommunications regulation in Kansas. Policy makers everywhere are anxious to relieve poverty. This does not distinguish Kansas from its neighbors nor regions within Kansas as shown by the second column of Table 1. The distinguishing feature of Kansas policy is the desire to slow or stop the exodus of population from the Western part of the state. It is not clear that telecommunications policy can have much effect on population movements--the two columns of Table 2 are highly correlated--but policy makers are determined to do what they can. The plan proposed here therefore pays particular attention to the need to

provide a wide variety of high-quality services in sparsely settled areas even in the age of deregulation.

Thus the urban-rural distinction that is a part of state telecommunications regulation everywhere is particularly sharp in Kansas. Competition cannot realistically be expected to work the same way in a county with four people per square mile as it does in Wichita. Deregulation does not provide a panacea for people in these sparse settlements. And no plan that relies solely on competition to monitor their service has a chance of being adopted in Kansas.

The telecommunications industry in Kansas is fairly typical for the United States. The dominant local exchange carrier is Southwest Bell, which serves about 83.5% of the telephone lines in the state. The rest are served by some 34 independent companies and cooperatives. Long distance services are provided principally by AT&T, MCI and Sprint throughout the state, although these companies only own their own facilities in the eastern part of the state. Cellular service is universally available, but the low population density leads to large cell sizes which in turn causes poor reception in some areas. Cable TV service is available throughout the state.

The telecommunications network is reasonably advanced. Service is, of course, available everywhere, with 99.5% of the lines being single party and 73% being served by digital switches. Most of the interoffice trunking uses digital facilities, and there is a reasonable development of SS7 and

related services (Kansas Corporation Commission, 1994).

Current telecommunications legislation in Kansas is extremely general, and the Kansas Corporation Commission has taken a fairly conventional approach. Kansas is hardly in the vanguard of deregulation, but it is studying its options. This can be seen by locating Kansas in the NARUC (1995) scorecard of deregulation.

According to NARUC, IntraLATA toll service is allowed to be provided by competitors on a 10XXX basis in every state, including Kansas. Equal access (1+) for IntraLATA toll is being considered in a number of states, but currently is authorized only in Florida. Local exchange competition is flatly prohibited in only eight states, including Kansas. However, the legalized permission is replete with specific conditions and exceptions which vary greatly among states. Twenty-nine states allow resale, but the terms and conditions vary enormously from state to state. Kansas does not currently allow resale, but it is being considered in the context of a docket on competition.

Twenty-eight states, including Kansas, have made no provision for intrastate access to the local exchange network (interconnection). The other 22 states have some arrangements either in place or pending, but again there is enormous variability in terms and conditions

Despite the considerable amount of activity (Virtually every state has at least one active proceeding to deal with one or more of these issues.), full local exchange competition--in

the sense that people can make all their calls using a provider other than the local telephone company--is not yet in existence anywhere in the United States, although there is promise that service will begin in a number of jurisdictions in 1996.

The Kansas Corporation Commission has made arrangements with Southwestern Bell to implement temporary price regulation in exchange for commitments on Bell's part to make certain investments. These arrangements are expiring, and many entities, including cable TV companies and interexchange carriers, are clamoring to be allowed to enter local exchange markets in the metro areas. While the Commission has opened several dockets concerning infrastructure and competition, the Kansas Legislature established a joint legislative-industry committee, appropriately called the Kansas Telecommunications Strategic Planning Committee, to develop a telecommunications policy for the state of Kansas. The approach described below was developed in support of that Committee.

III. Proposed Regulatory Framework

The regulatory framework proposed here is outlined in Table 3. The proposal clearly does not exhaustively detail the solutions to all the major issues which arise when moving from a heavily regulated to an unregulated environment. However, it does include a fair amount of detail in a number of key areas and suggests procedures and directions to be followed in others. It is pragmatic, simple and comprehensible, emphasizing the

complementarity among different components of the plan, and it avoids the contentious and insoluble problems of cost allocations which have clogged telecommunications regulatory calendars for decades in the United States. It provides for affordable service in the most remote areas of Kansas, and it is balanced, in that all parties, including the public, realize some benefits.

The fundamental philosophy of the proposed system is based on two principal concepts: Services should be deregulated to the maximum extent possible, while maintaining safeguards against abuses where monopolies continue to exist; and the industry should be relied upon to develop detailed plans in all areas, with oversight from the Commission as required.

The plan involves actions by both the industry and the Commission, and if implemented will yield a system with a very light regulatory hand, protection against abuses in remaining areas of monopoly, and the rapid development of an advanced information infrastructure. The plan allows for competition to have its beneficial effects where competition is viable and provides incentives for investment and reasonable access to services in areas where competitive conditions do not exist. It therefore is particularly responsive to the urban-rural discrepancies that appear in Kansas as East-West differences.

As discussed above, and summarized in Table 3, the plan has four parts: objectives, plans and processes to be created by industry participants, deregulation and competition, and pricing

policies.

1. Objectives

As noted above and also listed in Table 3, there are three principal objectives of telecommunications policy.

First, it should stimulate the construction of an advanced telecommunications infrastructure. In some sense, this is the ultimate objective of telecommunications policy no matter what the conditions. The existence of such a network will enable current and future needs to met, and will bring the benefits of new technologies to as wide an audience as possible. It is important that the network be constructed in a prudent and economical manner consistent with the objective that facilities and services be made available throughout the state.

Second, policy should encourage competition in markets where competition is likely to be viable. This is perhaps the most effective way to meet the infrastructure objective. As part of this objective, it is desirable to make the transition from monopoly as rapidly as possible consistent with consumer convenience and industry stability. This is not to imply that competition should be artificially introduced where the underlying economic conditions will not support it. In these areas, such as the western part of Kansas, network infrastructure improvements will continue to be made largely by the incumbent telephone companies.

Third, it should protect universal service. It is

generally accepted that telephone service at least, and perhaps some other services as well, are necessities in a modern society. It is therefore essential that telephone service remain universally available at affordable rates. This does not necessarily mean continuation of the current subsidy streams and may involve targeting of subsidies towards particular users based on such considerations as cost of service and ability to pay. But it does mean that telecommunications services should enhance the attractiveness of life on the western prairies, not be another irritation.

2 Plans and Processes

The first action in this plan is to require the Local Exchange Carriers (LECs) to file regulatory reform and network infrastructure plans with the Commission. The second is to develop a process for supporting Universal Service.

Wherever possible we prefer to have the industry, rather than the regulators, make detailed plans to implement policy directives. We therefore recommend that the incumbent LECs be required to take the lead in filing such plans. The regulators may approve or disapprove the plans, but their powers are limited.

The regulatory reform plan establishes the environment for the transition to competition and the incentives for the construction of an advanced network by the LECs. The establishment of such a comprehensive set of plans is probably

the only feasible means of obtaining a full spectrum of modern telecommunications services in areas where competition is unlikely to develop.

Regulatory reform plans may include, among other things, price caps for local exchange and switched access services, deregulation of all other services, and price rebalancing among local exchange, toll and access. These issues will be discussed in detail below.

Alternatively, any LEC may continue rate of return regulation. Network infrastructure plans are required, however, whether or not price caps are elected. Rural telephone companies unlikely to face local competition in the near future may not want to change their regulatory environment. This luxury of being grandfathered in regulation must be "paid for" by commitments to upgrade rural telecommunications networks in accord with a reasonable plan.

The network infrastructure plans should be directed toward providing widespread availability of common facilities which will support the variety of new services likely to become commonplace in the next few years. They therefore should include schedules for introducing SS7, a high speed signaling system, and the services it supports, and for availability of basic and primary rate ISDN (Integrated Services Digital Network--a system for providing switched digital services at data rates ranging from 64kb per second to 1.5mb per second). They also should include schedules for full fiber connectivity among central

offices. That is, every central office should have at least one fiber route going to another central office. This capability will facilitate the rapid deployment of broadband services as demands evolve. This prescription for infrastructure development is similar to plans that have been adopted in such states as Tennessee, New Jersey and Pennsylvania (Tennessee, 1990; New Jersey, 1993; Pennsylvania, 1994).

In addition to common infrastructure, public institutions such as schools, hospitals, libraries and government facilities should have access to broadband services wherever they are located. The infrastructure plans therefore should include proposed schedules and arrangements for bringing fiber facilities to those public institutions that want to take advantage of broadband services.

To ensure that the proposed infrastructure upgrades are used and useful, every regulatory reform plan should include a commitment to provide broadband services at prices close to long-run incremental costs (LRIC) for public institutions to which facilities have been built under the associated infrastructure plan. It should include a commitment to provide basic rate ISDN service at prices which are uniform throughout the company's serving area and which are designed to stimulate the development of an extensive residential market. This provision is one way to mitigate the urban-rural differences in Kansas, or wherever a similar plan might be applied.

To provide the telephone companies with the financial means

and incentives to build the infrastructure and provide the necessary services at prices close to cost, it is proposed that no audit, earnings review or rate case shall be performed at the beginning of the process. (See below.) Such a review might or might not lead to rate reductions, but to the extent it puts additional financial pressure on the telephone companies, it will reduce their willingness to take these actions. This provision is based on the premise that there is more social benefit in providing access to advanced services than in reducing prices by a few pennies a month. It also illustrates the complementarity between the various parts of this program.

A system also needs to be developed to preserve universal service, that is, to ensure that telephone service remains affordable throughout the state. This is a particularly important issue for rural areas in western Kansas, where costs are high and revenue potential is low. The recommendations for pricing to be outlined below minimize the need for special provisions to preserve universal service, but they do not eliminate it.

Universal service currently is supported by a combination of high access charges, high billing charges, high business service charges, and explicit Federal subsidies. These arrangements, by their nature, do not encourage efficiency; the Federal fund pays depending upon costs. There consequently is a potential for misallocation or even abuse. In addition, competitive entry will make it difficult to sustain current

subsidies in their present form. Urban prices will move toward long run incremental cost plus a reasonable contribution to overall costs in the short run, and to market levels in the long run. Revenues used to support universal service will fall.

Although ultimate approval by the regulator is essential, new plans to maintain universal service should be developed by members of the industry initially since they are in the best position to determine who needs how much. An industry committee should be convened, to define universal service and determine if a new fund is necessary, the size of a fund if needed, if such a fund can be made transitional, who should contribute to the fund, and who should receive payments from the fund, possibly including support for infrastructure improvements if required.

There clearly is complementarity between the pricing provisions, alluded to above and described more fully below, and the need for a Universal Service Fund. The complementarity between infrastructure plans and universal service is more subtle but no less real. The desire for universal service is not simply a demand for lower prices. It is also a need to be connected to advanced features of the telecommunications network on reasonable terms (OPASTCO, 1994). Credible infrastructure plans therefore will moderate the demands for special provisions to ensure universal service. Reasonable arrangements for universal service similarly will enhance the willingness of rural telephone companies to develop infrastructure plans to make services available in their areas.

3. Deregulation and Competition

Deregulation is not a simple process; it has many dimensions and is closely coupled to the introduction of competition. Since one of the overall objectives of this plan is to move towards a competitive market as quickly as possible, the plan specifies that facilities-based competition should be authorized immediately. Local exchange competition cannot develop unless the customers of new providers can reach customers of the incumbent carriers. Hence if competition is to develop, LECs must be required to provide interconnection rights to competitors. In order to make it possible for potential competitors to install their facilities without exorbitant expense and public disruption of streets and other public rights of way, LECs should be required to provide pole attachments and duct space on the same basis as they provide it to cable TV carriers.

Following the principle that the industry should deal with details whenever possible, interconnection arrangements should be negotiated among the parties. Any party wishing to offer local exchange service will negotiate the terms and conditions, including prices, of interconnection with the LEC. If agreement cannot be reached within 90 days, then the Commission is required to intervene and resolve the issue on an expedited basis. Generally, interconnection rights and capabilities will be reciprocal. However, existing LECs must, at minimum, make the following features available to competitors:

- Means for competitors' customers and LEC customers to interconnect,
- Number portability, to the extent it is technically feasible,
- Toll access,
- Access to operator services,
- Directory listings,
- Access to directory assistance,
- Access to 911 service.

Since interexchange carriers are already operating in competitive markets, and competitive local carriers will by definition be competing, there seems little reason to maintain regulatory oversight of these companies. In these cases market forces should be adequate to protect the public with the following three exceptions. These exceptions are needed because it is unlikely that telecommunications competition will extend to all parts of Kansas immediately.

First, access charge reductions developed as part of a rate rebalancing plan (to be discussed below) must be passed through to consumers. Since these reductions which reduce costs for the IXCs are being traded off against local exchange price increases, the reductions should go directly back to the end users.

Second, toll prices must remain geographically averaged. This is an item which goes against the free-market philosophy of this proposal. However, rural companies have very high exchange

access prices, which they use to cover their high local-exchange costs. If these costs were passed through to rural customers by the interexchange carriers in the form of high toll prices, it could cause substantial hardship among rural users, who tend to make heavy use of long distance. Hence the continuation of the requirement to average toll prices.

Third, new entrants into the local exchange market must demonstrate technical and financial viability. The Commission may provide oversight to prevent fraud or other practices which would be harmful to consumers. These provisions are merely an effort to make sure that the public is not harmed by an influx of unqualified, incapable or dishonest service providers.

These three provisos clearly moderate the freedom of competitors, but they are needed to protect consumers from possible abuses in the transition period. The first two measures ensure that toll rates do not rise in areas too sparsely settled to support local competition. Because rural customers pay for both basic service and toll, restraints on toll rates enhance efforts to preserve universal service in rural areas. The two policies, in other words, are complementary. The third proviso protects existing LECs from nuisance demands that might be encouraged by the requirements to negotiate interconnection and hence protects consumers from the risk of being stranded by hit-and-run competitors. The policies of requiring evidence of viability for new competitors and relying on negotiation for interconnection are complementary as

well.

Although the foregoing actions should be undertaken immediately, mandatory resale and sharing should be delayed. Resale and unbundling of local loop, switch, and trunk facilities may, of course, be offered by the LECs at any time, but should not be required to be offered by Southwest Bell until the MFJ interLATA restriction has been removed. If the interLATA restriction is not removed within three years, the question should be reexamined in the light of intervening experience in other jurisdictions. Resale and unbundling for other LECs similarly will be allowed but not required for three years, after which time the question will be reexamined.

The reasons for this provision illustrate the complementarity among the parts of this deregulation plan. Current pricing arrangements are known to be skewed with respect to costs, providing opportunity for significant arbitrage without any particular public benefit. If interexchange carriers rapidly enter the local market using resold facilities, this could reduce LEC revenues from high-volume customers enough that there will be substantial pressure for rapid increases in local rates. As explained below, this plan does not allow local rates to rise rapidly.

Although there are consumer benefits from resale under certain circumstances, the potential benefits from facilities-based competition are substantially greater. Facilities-based providers have much more incentive and opportunity to add to the

overall infrastructure and provide new services, and they are fully in control of their own service quality, as opposed to relying on the LEC from whom they lease. They also make far greater capital investments within the state, which is an advantage to the state. These potential benefits have costs, and it is more difficult for facilities-based competition than for resale to get started. If allowed, resellers will compete with facility-based competitors, adding to their difficulties (Teleport Communications Group, 1995).

But if the resale provision is delayed, then some rebalancing will already have taken place under the pricing formulas to be described below, and there will be some opportunity for compensating revenues for Southwest Bell from interLATA toll services, thus reducing the pressure on local rates. It also gives facilities-based carriers a bit of a "head start." They can establish themselves and be ready to compete with the resellers, who have far lower barriers to entry.

This provision therefore makes those for infrastructure and new service development, local competition, universal service, and pricing (to be described below) more effective.

IntraLATA equal access also should be delayed. The RBOCs are currently precluded by the terms of the 1984 antitrust decree from providing interLATA toll service. AT&T and the other interexchange carriers have not until recently made very serious attempts to enter the intraLATA toll market, which generally has been reserved for the RBOCs by state regulators.