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Divestiture, By-Pass, Entry, Cross Subsidization: Conflicting Forces in the Deregulation of the South Dakota Telecommunications Market

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DIVESTITURE, BY-PASS, ENTRY, CROSS-SUBSIDIZATION: CONFLICTING FORCES IN THE DEREGULATION OF THE SOUTH DAKOTA TELECOMMUNICATIONS MARKET

by

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ABSTRACT

This study reviews the impact the divestiture of AT&T had on the South Dakota telecommunications market, and explains the technological changes that have occurred and how these changes have been translated into lower costs. The South Dakota telecommunications market is examined under the scenarios: 1) fully regulated; 2) partial regulation; and 3) unregulated market. ARIMA procedures are used to forecast changes in revenues under the two different regulatory schemes. The degree of constestability of the South Dakota Telecommunications market is investigated to determine if competitions is suitable for the unregulated scenario. The study argues that the market is competitive.

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INTRODUCTION

During the 1980s, three basic events occurred that shaped the business environment of the telecommunication industry in the United States and South Dakota in particular. First, the divestiture of AT&T of its operating companies in 1984; second, the growth of technology; and third, the host of new entrants providing long distance services. These lower priced, nonregulated "reseller" companies proliferated when the high-volume users were encouraged by the "by-pass" alternative to avoid the regulated access fees of the Regional Operating Bell Companies (ROBC's). In South Dakota, the ROBC was Northwest Bell (NWB), later to be merged into U.S. West.

The managerial issue faced by the South Dakota Public Utility Commission (PUC) was how to determine prices for NWB services. The alternatives were that the PUC retain price management or let the market determine prices. NWB had been a regulated natural monopoly and the provider of last resort for universal or in home service. Universal service rates had been cross-subsidized substantially. Long distance rates had been held artificially high and had become a convenient means for regulators to subsidize local telephone service (Crandall, 1988). Paradoxically, continued regulation would weaken NWB, eventually leading to higher charges for universal service to maintain reasonable rates of return. A worse-case possibility was that NWB would end up like the railroads in South Dakota (also a provider of last resort) with a monopoly over low-margin, non-profitable business and little of the high-margin, profitable business.

REGULATED MARKET ENVIRONMENT

Historically, rate-of-return regulation of the telephone industry had been justified on the basis that it was a natural monopoly, where the natural monopolist was the sole provider and seller of a good or service because technology made single firm production cheaper than any other alternative. The natural monopolist differed from the true monopolist in that the technology was freely available to all potential competitors.

The rapid rate of deregulation that occurred in the late 1970s and 1980s in the airlines, trucking, banking, and railroads industries was not as pervasive in the telephone industry, particularly for intrastate long

distance services. AT&T had been broken up as a result of the 1982 antitrust settlement, divesting itself of the RBOC's as specified in the Modified Final Judgment in 1984. (Crandall, 1988)

Competitive entry by new firms occurred slowly at first but then accelerated largely because of two factors. First, the access fees for toll services of the regulated RBOC's were held at presettlement rates, while non-regulated "resellers" were guaranteed access fees set near the incremental cost of connecting the calls at each end. These regulated presettlement rates for toll and private line services led to a continuous drain of high volume customers and revenues away from the regulated RBOC's as the "by-pass" option prompted customers to seek lower priced alternatives for intrastate toll services. (Jackson and Rohlfs, 1985; USTA, 1984; Yankee, 1985) Second, the continued advance in electronic technology led long-distance switching equipment to fall precipitously in price, which in turn led to substantially lower first-cost entry barriers for new competitors and/or resellers. (Framm,1987)

Cross-Subsidization

Regulated overpricing of long-distance toll services prior to the 1984 AT&T Settlement allowed federal regulators to cross-subsidize local telephone service. After the divestiture, the practice of regulated overpricing was passed to state regulators as an easy method to continue the cross-subsidization of local universal service. (FCC, 1985) The "by-pass" alternative developed slowly at first, and the ROBC's and state regulators were not forced to seek more efficient pricing systems, choosing instead to perpetuate the protective environment of the natural monopolist. Eventually, the emerging competitive environment forced RBOC's to seek market pricing as an alternative to regulatory pricing because of shrinking revenues from loss of market shares to the by-pass alternative. Concern about system efficiency by state regulators faded as the revenues of RBOC's (the provider of last resort of universal service) were being transferred to the "resellers" who had no such obligation. (Crandall, 1988)

Pressure for regulatory cross-subsidies will not likely subside. In fact, in light the price distortions and related costs, the political justifications for continued regulation in the telecommunications industry continue to be, first, the concern about the "monopoly bottleneck" of the local exchange by the ROBC's and, second, the related concern of protecting local universal service.(Derthick and Quirk, 1985; Kahn and Shew, 1987)

This second concern is beyond the scope of this paper, except to hypothesize that cross-subsidization probably serves to deter faster development of alternatives such as cellular or other like systems, thus maintaining the continued dependence by some on existing local universal services. This exaggerated concern may not be alleviated until everyone is carrying a telephone in his or her pocket.

In South Dakota, NWB lobbied hard for the passage of Senate Bill 42 (SB42) in the 1988 South Dakota Legislature. SB42 would allow the PUC to deregulate selected telecommunication services depending on the degree of competition among providers of that service. SB42 provided for three categories of competition: (1) noncompetitive, (2) emerging competitive, and (3) competitive category.

The PUC was directed by SB42 to hold public hearings and investigations to find which service or group of services fit into each category. The PUC was granted authority to make the final decision. The PUC's first and foremost interest was consumer protection. The economic health of NWB was secondary, although the two were not mutually exclusive.

Tentatively, SB42 included in the noncompetitive category such multiproduct services as local exchange or Universal Service (access and transmission of two-way voice), emergency services, coin telephone, and other essential services. These would continue to be rate-of-return price regulated by the PUC.

The emerging competitive category was defined by SB42 as service for which at least 20 percent of the company's NWB customers in South Dakota had alternatives available for that service. Tentatively, the legislature included intra-LATA message toll service (MTS or long distance), intra-LATA wide area telephone service (WATS), and new products and services not functionally required to provide local exchange service.

The competitive environment of intra-LATA long distance (MTS and WATS) was the critical service that concerned both the PUC and NWB. The PUC would have price oversight over emerging competitive services, but would not retain rate of return price regulation. Price oversight meant that NWB could lower tariffs on MTS and WATS but could not raise tariffs without approval of the PUC. The cost associated with these services would be eliminated from the rate of return base. Some members of the PUC objected to putting MTS and WATS in this category, arguing MTS and WATS should be noncompetitive services and remain regulated.

The fully competitive category of SB42 included services for which at least 50 percent of the customers of NWB had alternative services available. Tentatively, this included optional services such as custom calling and touch tone, Centron/Centrex, billing and collection services, cellular radio service, premise cable/inside wire and private line/special access. These services could be priced competitively, but could be reclassified if they no longer met the criteria of the category.

Within 90 days of the effective date of the legislation, the PUC was to determine if the services were properly classified. The PUC was to determine: 1) the number and size of alternative providers, 2) market share, 3) impact on universal service, and 4) the ability of the market to hold prices close to cost. A fifth standard, which was basically undefined, included the ability of alternative producers to provide the functionally equivalent service at competitive rates, terms, and conditions of service.

South Dakota, a Two-Tiered Market

The South Dakota telecommunications market prior to 1980, for all practical purposes, was a completely regulated market. AT&T provided interstate MTS and WATS service to South Dakota. In 1980 the FCC allowed interstate resale through WATS lines. By May 1982, the South Dakota PUC extended this to intrastate service. In 1983 interstate resellers began to provide WATS long-distance service. In 1984 with the Modified Final Judgment the RBOC's filed interstate access tariffs with the FCC. NWB then filed intrastate access tariffs with the PUC in May 1986. (Vondras, 1987)

Prior to SB42 and as mandated by the PUC, NWB's long distance rates averaged 25 cents per minute. As of 1983, the PUC permitted reselling of NWB services. Resellers, not regulated, set their rates competitively. Their intrastate long distance rate averaged 16 cents per minute. This nine cent differential allowed NWB's competitors to capture a significant share of the long-distance WATS market, particularly the high volume business users. The results were a two-tiered market, one tier that was regulated (NWB), the second tier a non-regulated competitive market.

Access fees set by regulation at 6.4 cents per minute for connection and termination provided the resellers with a comfortable price-cost cushion of slightly more than nine cents per minute. By 1988, 19 resellers had entered the field as direct competitors to NWB's long-distance services. Twenty-two firms or

government agencies had constructed their own switching and transmission facilities to handle their communication needs. These facilities had the capability of making these firms and agencies potential competitors. Although these new competitors represented only 2% of NWB's accounts, they had provided 35% of NWB's revenues. (Vondras, 1987)

TECHNOLOGICAL ADVANCES

Technological evolution in electronic hardware, installation and maintenance has substantially reduced costs of by-pass and switching equipment. Technology has also resulted in cheaper, more reliable equipment, with greater performance features and better overall quality and durability. A rule of thumb in the electronics industry is that technology results in a 20% per year decline in costs. (Jackson and Rohlfs, 1985) Since this evolution has persisted for more than 30 years, there was reason to believe the trend would continue.

Three technologies involved in building an alternative by-pass system include transmission, multiplexing/concentration, and aggregation. Transmission is the basic building block of the telecommunication industry, the means of carrying a signal from one location to another. Multiplexing and concentration allow many signals to be combined and carried over a single transmission link. Aggregation technologies allow a number of small users who might be located in the same general area (industrial complex, office complex, mall, etc.) to cluster together for a transmission to either an inter- or intra-state carrier and avoid the local operating company (NWB in this case). All of these technologies were available on the market.

Transmission

Transmission comes in two basic forms; radiated electromagnetic wave systems (microwave, satellite, mobile radio) and guided wave systems (fiber optics, paired wire, and coaxial cable). Both systems have advantages and disadvantages. First capital costs are greater for fiber or wire, but maintenance costs are lower. Fiber is more cost effective for short-distance and high capacity links. Micro wave is low cost but requires frequency, line of sight, and license clearance. Both systems had declined dramatically in cost and were available from several vendors. For example, in 1988 the initial capital costs, $225 per voice, of a micro wave were one half of the price it was in 1984 for the same link. Projected costs by 1994 are $75. Fiber systems have declined dramatically, as well, but costs of installation and rights-of-way have not. Consequently, costs

will probably stabilize for fiber systems. (Adamson et al, 1988)

Multiplexing

Multiplexing allows numerous calls to be combined and transported over a single communication link, allowing efficient use of high capacity transmission systems, particularly large users during peak period traffic. Large volume customers, using multiplexers with or without their own transmission networks can by-pass NWB and go directly to intrastate resellers or interstate carriers. A fully installed multiple access exchange with advanced features and computers could be purchased in 1988 for $400 per voice channel. A medium sized unit capable of 2000 calls simultaneously can be installed for $800,000 (Adamson, 1988)

Using the advertized rate schedule of one intrastate reseller of 17.76 cents and 14.21 cents for day and night calls, and NWB access charge of 6.4 cents for connection and termination, the resellers gross operating margins could be 11 cents and 8 cents respectively. Disregarding incidental costs of billing, accounting, advertising, and utilities, the payback time would be determined by dividing first capital costs by the gross operating margin revenues per minute. The system would take just 30 days if operated at 10% capacity to recover first capital costs (less than 3 days at 100% capacity).

Initial capital-costs for a potential reseller in this industry would be very low indeed. Salvage value upon exit would parallel the decline in new equipment costs, plus minimal wear and tear.

Aggregation

Aggregation technology allows the direct collection of long distance traffic from a cluster of locations to by-pass local exchange access and transportation facilities. Aggregation is particularly attractive to individual businesses which are not large enough to justify owning their own multiplexer system. Grouping together, they can realize the economic advantages of a multiplexer and perhaps of a partial or complete transmission system.

MARKET CONFIGURATIONS

Conventional wisdom at the PUC was that NWB was the dominant firm and it had to be rate-of-return price regulated to protect the consumer and emerging firms providing alternative competitive services from predatory pricing by NWB.

Full price regulation would require artificial entry barriers to be created by the regulatory board in

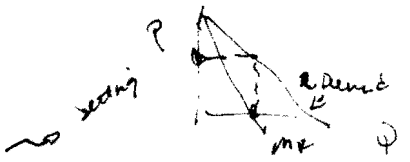
order to make NWB the sole provider of services. Since the FCC had already allowed interstate resale of WATS in 1980 and the PUC had sanctioned intrastate WATS in 1982, it was clear that NWB had significant intraLATA competition by 1983, if not earlier. To all but the most stubborn regulator the theoretical benefits of a return to full price regulation was far outweighed by the costs. Those costs included the bureaucratic difficulties of artificially determining the price and output levels to insure average cost pricing and a normal rate of return. Compounding the pricing problem were the myriad of prices to be charged for multiple services; proper rate of return that would provide incentive for capital base expansion and new technologies; and, not the least, the cost of denying competitive entry in a dynamic, complex, and highly technical multiproduct industry. All of these costs would eventually have to be born by the consumer in the form of higher rates.

Partial market regulation of the dominant firm's services had led to the two-tier pricing structure. The majority of the PUC liked this market configuration and resisted classifying NWB's long distance and WATS services into the emerging competitive category. Basically the PUC seemed to fear that NWB would dominate the competitive fringe, even if the competitive fringe accounted for more than 20 percent of the market share. The critical issue facing the PUC was to maintain the financial and economic health of NWB, the supplier of last resort of a cross-subsidized service, in a market drawing a host of new entrants.

The concern of regulators was whether the unmanaged market would be conducive to competitive behavior. Incentives to enter or exit the market were the key issues. Firms enter a market when they can earn economic (excessive) profits and leave a market when they incur economic losses. The potential entry of competitors and the exit of weaker competitors determine the degree of market contestability. Markets with a high degree of contestability typically demonstrate competitive behavior (normal profits). Markets with a low degree of contestability are unable to keep prices near production costs and allow persistent economic profits. To comprehend the dynamics of market contestability and apply it to the South Dakota telecommunications industry, we need to investigate the evolution of the theoretical implications of contestable markets.

Evolution of Economic Thought

Pure competition and pure monopoly are static polar models which although extremely useful, do not approximate the real world. The pure competitive model demonstrates productive and allocative efficiency



norms, while the pure monopoly model demonstrates market power and the resulting loss of efficiency. Neither model contains elements of rivalous behavior. The popular notion is that the fewer the number of firms, the greater the tendency towards monopolistic behavior, which in turn means higher prices to consumers, economic profits to producers, and static efficiency losses to society. This was the mind set of the PUC in 1988.

In the 50s, 60s, and 70s, Joseph Bain and others tried various approaches to describe imperfect market behavior. Bain concentrated on the three elements of the market: structure, conduct, and performance. He saw a causal relationship between the three elements. If the structure was good (e.g., many firms) one should expect good market conduct to follow (pricing, output, and product innovation) and, in the end, good performance (efficient use of resources). Early market structuralists studied industry concentration ratios to predict conduct and performance. Disappointed with concentration ratios to explain behavior, Bain turned to entry barriers as the most important variable of market structure. Bain found that low entry barriers resulted in the established firms setting prices only slightly above the so-called competitive level to avoid attracting new entrants. If entry barriers were high, established firms could persistently raise prices without attracting new competition.

In 1982, William Baumol, John Panzar, and Robert Willig published their theory of contestable markets. The theory focused on understanding the multi-product industry cost structure and the implications for competition and market performance. They drew heavily upon previous economic thought, particularly the welfare and efficiency criteria of the classic purely competitive model and Bain's notion of entry barriers and market structure. Unlike the theory of pure competition, Baumol's hypothesis did not rely upon the assumption of atomistic structure (large numbers of firms selling a homogeneous product, with all firms being price takers). Instead, a contestable market was simply one in which there was considerable freedom of entry or exit. This did not mean that entry was costless or easy, but merely that the potential entrant suffers no disadvantages in terms of production technique or perceived product quality when compared to those already in the market. The potential entrant evaluates whether to enter the market on the basis of prices being charged by those already in the market. If the potential entrant sees an existing economic profit the firm enters the market. Freedom of exit must also be possible in a contestable market. The firm must be able to leave the market by

recouping its costs. This means that the capital investments the entrant brought into the market can be resold and reused without loss, except for normal wear and tear and depreciation. Freedom of exit and recoup costs is, in reality, a factor in the decision to enter a market.

The critical feature of a contestable market is that it is vulnerable to potential entry by competitors. The competitor can enter the market, collect a profit and exit the market when prices change without capital loss. Hence, a contestable market is a competitive market. Thus, even if the market were dominated by a natural monopolist, it could still be a competitive market as long as the conditions of contestability existed, namely low barriers to entry. The allocative efficiency norms (welfare characteristics) of a contestable market are the same as that of a purely competitive market without the unrealistic assumptions.

The first efficiency norm is that prices charged for the goods and services must be equal to economic cost. Any price greater than economic cost would result in excess profits, giving the potential entrant room to undercut the price of the incumbent producer and quickly make a profit until the incumbent lowers its price. Consequently, zero economic profits would exist. This is a necessary condition to avoid potential hit-and-run entry by new entrants. This is also the reason why the mere opportunity for hit-and-run entry is sufficient to cause a natural monopolist to avoid excess profits.

The second norm is that productive efficiency would also be maintained (production at the minimum cost). Just as profits would be an invitation to enter, so would any form of inefficient organization of production. Unnecessary costs would provide incentive for the potential entrant.

The third welfare characteristic of a contestable market is that no product will be sold at a price less than its marginal cost. A price at less than marginal cost of production would mean that a potential entrant could enter the industry and produce a slightly smaller quantity and make a profit. This welfare characteristic is particularly important for the regulated market. It means that if cross-subsidy of some service is taking place (e.g., universal service subsidized by regulated toll service), allowing nonregulated firms to underprice regulated service would be tantamount to unfair competition.

The interesting implication of the contestable market theory is that most or all of the welfare criteria contained in the purely competitive model (thought to be the ideal) can also be found in a multi-product, or

multi-service market vulnerable to hit-and-run entry. This holds true regardless of market structure in terms of number of firms and/or homogeneity of its product(s). The only requirement for a self-correcting force is the presence of low-to-moderate barriers to entry.

REGULATORY ENVIRONMENT

To simplify the array of possibilities, three models of regulation were examined: Fully Regulated South Dakota Markets, Partial-Market Regulation, and Unrestrained Competition.

Scenario One: Fully Regulated South Dakota Market

NWB would be regulated as if it were a natural monopoly. All competitive activity would be naturally blocked and complete price regulation would be achieved. The monopolist and the consumer would be protected with a price that reflected fair rate of return. This model was considered to be too costly, bureaucratically unyieldly, and unrealistic given previous court decisions.

Scenario Two: Partial Market Regulation

The PUC had permitted reselling of NWB capacity as early as 1983. While NWB's nominal revenues have been rising, real toll call revenues have declined under the partial market regulatory configuration (Figure 1).

NWB's long distance rates as mandated by the PUC average $.25 per minute, while the resellers setting prices competitively average $.16 per minute. The $.09 differential allowed NWB's competitors to capture a significant share of the long-distance market after partial regulatory policies were adopted.

To demonstrate the effect of partial market regulation an ARIMA (autoregressive integrated moving average) model was fitted to NWB toll revenues to forecast monthly revenues through 1992 under two regulatory assumptions. The first forecast assumes full regulation through 1992 with no competition (Figure 2). The second forecast assumes partial market regulation and forecasts revenues from January 1988 to 1992 (Figure 3). Comparing NWB's 1987 real revenues with that predicted by the ARIMA model under full regulation suggests that NWB experienced an 18 percent decline in real toll revenues (approximately 18 million real dollars).

The ARIMA forecast for both full and partial regulation was made through 1992. Under full regulation NWB toll call revenues were predicted at $4.2 million per month, while under partial regulation toll call

revenues in 1992 were forecast at $3.8 million per month. Partial market regulation could thus be translated into approximately a 20 percent decline in toll revenue for NWB by 1992 (Figure 4). The shaded areas represent lost revenues to NWB under the two-tiered market of partial regulation.

The tendency to by-pass occurs in the profitable high volume, high revenue telecommunications submarket (i.e., business customers). As overall revenues decline with the increasing propensity to by-pass, the PUC will be forced to entertain subsequent rounds of rate management. Through the attempt to recover lost revenues and defend the required rate-of-return through rate averaging, NWB and the PUC would become entangled in a vicious cycle of rate adjustments which will only induce more frequent competitor price response and greater competitor by-pass incentives.

If NWB's revenues continued to decline on intraLATA services, the PUC would be faced with two possible courses of action to defend the target rate of return. It could allow NWB to compete by reducing intraLATA prices or allow an increase in universal service rates to recoup at least part of the intraLATA revenue loss. In the former case, a rate reduction which is allowed too late to allow recapture, may fail to increase NWB revenues in any event. This, in turn, would require price increases on NWB's universal services despite the belated attempt to recapture lost intraLATA revenues.

The increased use of by-pass by high-volume, price-sensitive users and increased price competition for commercial traffic will ultimately shift the burden of paying for the regulated NWB intraLATA and universal service system to fewer and fewer users. Since the by-passers are the high-volume, price-sensitive commercial users, the group bearing the greater share of the cost will be the low-volume, price-insensitive residential users, those least able to bear the increased costs.

The partially regulated market presents yet another ominous characteristic. If NWB loses enough market share and enough of its ability to compete, there will be less incentive to invest in new innovative technologies. Users of the partially regula ted phone system could be saddled with increasingly obsolete and inefficient equipment. Meanwhile, the unregulated firms could gain further competitive advantage by investing in state-of-the-art systems.

The ARIMA projections were not meant to portend the demise of NWB, but merely to demonstrate that

the market is and has been contestable. If SB42 were used to accommodate contestability, potential good results would prevail in a competitive market.

The reclassification of long distance service in the emerging competitive or fully competitive category would effectively eliminate the two-tier pricing system. The emerging competitive criterion of SB42 required the availability of alternative competitive service to at least 20 percent of the customers receiving NWB services. The fully competitive criterion requires 50 percent availability of other suppliers of the service or that the services are sufficiently discretionary that regulation is unwarranted.

In September 1988, there were 19 firms in South Dakota providing MTS and WATS long-distance services to businesses and residences. Customers in all NWB exchanges had access to long-distance services provided by competitive common carriers. Intra-LATA MTS and WATS more than meet the emerging competitive classification test of 20 percent availability, and, given the level of competition, the 50 percent availability criterion of the fully competitive classification. The intent of SB42 was to allow a competitive market structure to develop. SB42 allowed unrestricted entry and exit by competing firms, while NWB was prohibited from abandonment.

Scenario 3: Unrestrained competitive Scenario

An unrestrained competitive scenario assumes NWB is unhindered in setting prices on emerging competitive services (namely MTS and WATS). Under SD42, the PUC has the authority to investigate any NWB price change, which would have the effect of inhibiting predator pricing by NWB. If NWB were allowed to price freely in reaction to its competitors, its long distance rates would decline to the competitive price levels of the competitors' long distance services. Under this scenario, the telecommunication market would become competitive as NWB and its competitors actively contest for market share via price competition.

Due to the regulatory structure which allowed entry, long distance markets in South Dakota displayed competitive behavior even prior to SB42. Existing competition from 19 existing resellers already provides a major source of competition. Transmission systems could be purchased in the national market which was competitive in nature. The costs of micro-wave and fiber optic equipment was fairly low and falling, further reducing the risk of a sunk cost and increasing the potential entry and further increasing the contestability of the

market.

Reseller entry costs are nominal -- only a switching device, building, and incidental installation and operating costs. Private line service required for linkage between NWB's local switched access and the resellers's switch can be provided by NWB or could be customer installed.

The first capital costs for the switch is relatively minor, $250-500 thousand. Resellers could recover those capital costs in one month at current rates. Furthermore, the switches could be resold if the reseller exits the market. Consequently, resellers do not face significant sunk costs, and their business activity in the long distance market approximates costless entry and exit. Five existing inter-LATA common carriers (including AT&T, MCI, and US Sprint) already provide fierce competition to guarantee a sustainable long distance market. Competitive price behavior is essentially a foregone conclusion. Additional firms will enter as demand expands.

A major concern of the PUC is the effect on competitive forces if existing resellers left the market, and what would happen if the South Dakota market were unable to sustain all five common carriers and the market configuration drops to a small enough number of firms where pricing became noncompetitive. Due to lack of entry barriers, resellers would re-enter the market to earn economic profits; firms with private transmission facilities would enter the market by selling their excess capacity; large capacity customers of the remaining common carriers would construct their own transmission facilities; and due to low sunk cost, new common carriers would enter the market. Even if the sustainable market configuration became an oligopoly (or even a natural monopoly), the threat of "potential" entry will constrain market prices to competitive levels. Conversely, it is equally likely that sustainable market configuration would contain a number of efficient resellers as well as the existing transport firms. In either case it can be concluded that the post-deregulation long-distance market will be competitive.

CONCLUSIONS

Long-distance markets are sufficiently contestable to maintain a competitive behavior. If NWB were fully deregulated in the MTS and WATS market, it would pose no threat to the competitive environment of the South Dakota telecommunications industry. Competitive behavior in South Dakota would mirror the market

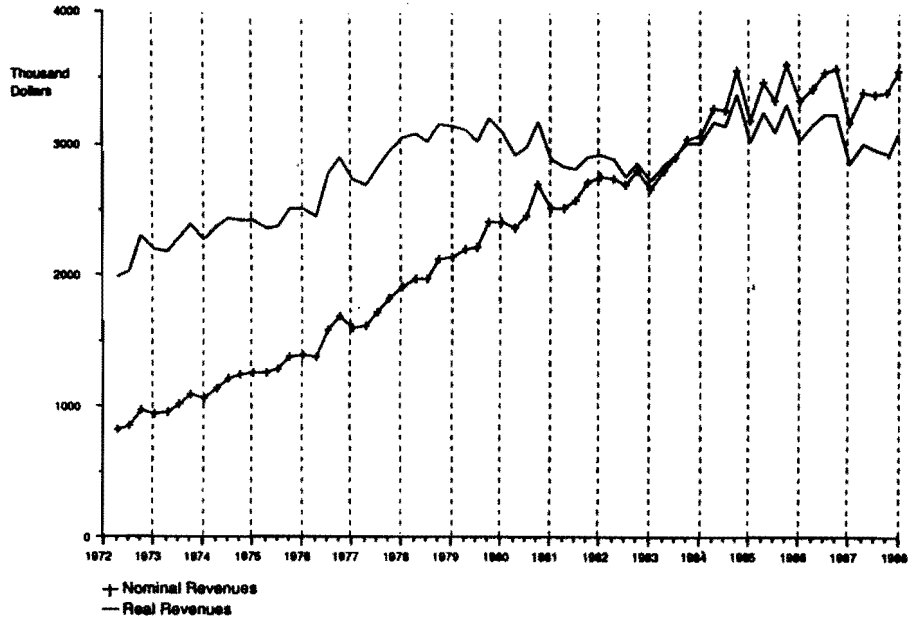
structure in the interstate telecommunications industry. In the long-run, the only healthy financial alternative for NWB and consumers of universal service would be unrestrained competition.

Epilogue

In 1989, the PUC ruled that MTS and WATS would be placed in the emerging competitive category, thus subject to price oversight. US West immediately petitioned for rate reduction. Estimated savings to consumers were put at $4.2 million per year. This was followed in 1990 by a second rate reduction of $1.7 million more per year. Average rates have decreased by more than 20%, with contracted WATS rates to high volume users dropping by as much as 50%. The number of competitors have increased to more than 30 firms. Rates for universal service have remained unchanged for more than seven years. Consumers and U.S. West have benefitted by deregulation.

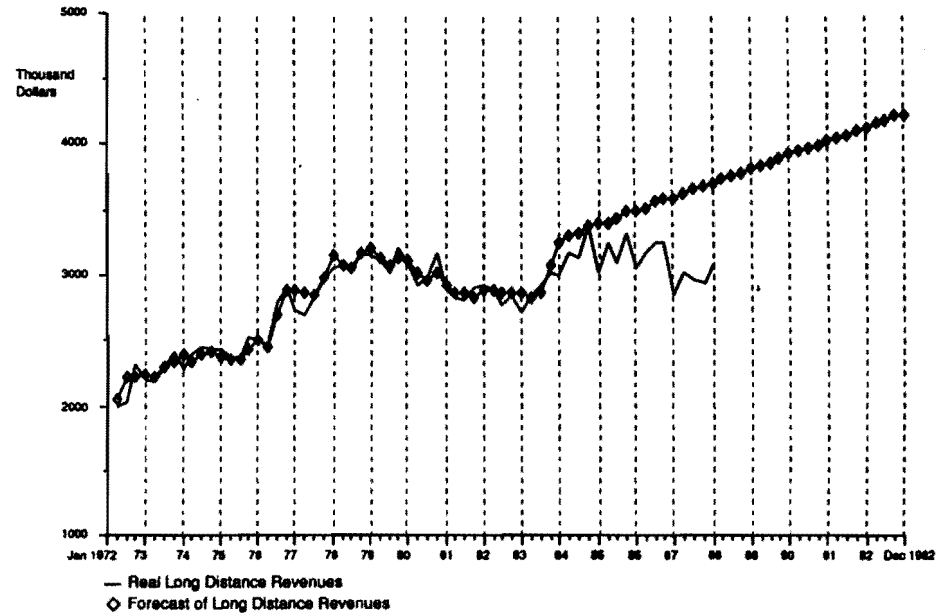
NOMINAL LONG DISTANCE REVENUES versus
REAL LONG DISTANCE REVENUES

Figure 1



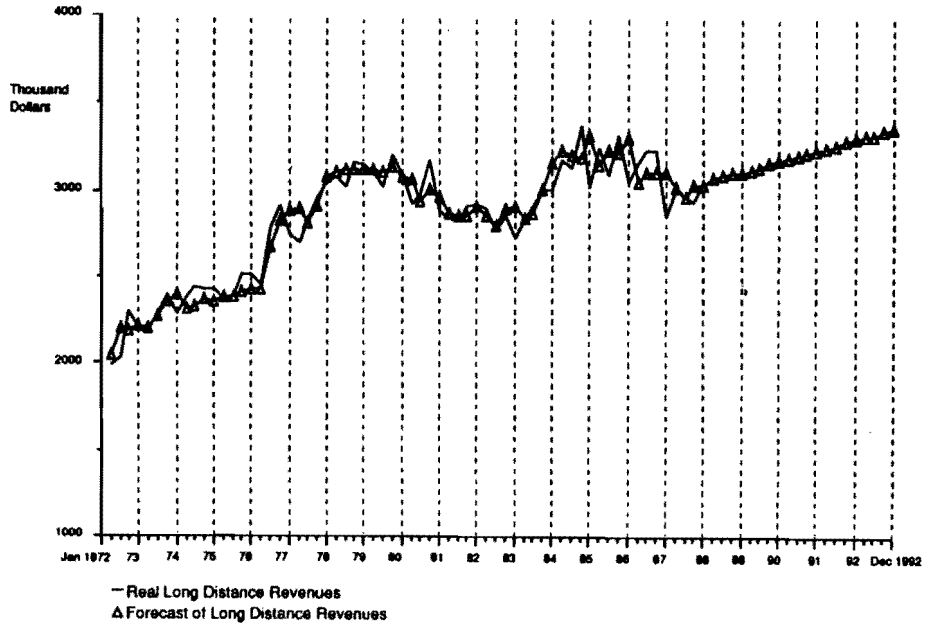
FORECAST OF REAL LONG DISTANCE REVENUES
UNDER FULL REGULATION

Figure 2



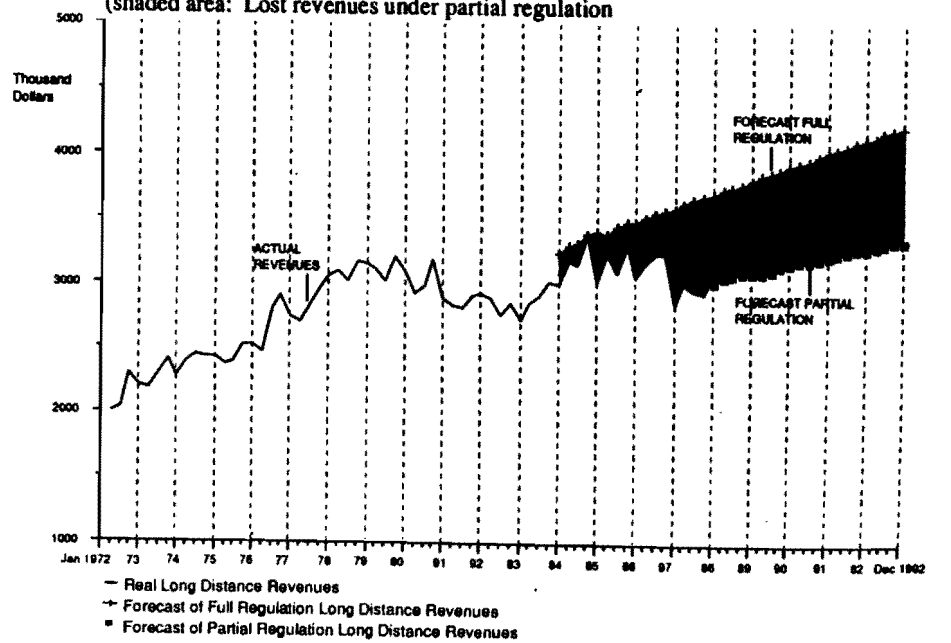
FORECAST OF REAL LONG DISTANCE REVENUES
UNDER PARTIAL REGULATION

Figure 3



COMPARASION OF ACTUAL REVENUES and
FORECASTS OF LONG DISTANCE REVENUES
(shaded area: Lost revenues under partial regulation

Figure 4



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