THE FUTURE ROLE OF THE TELECOMMUNICATIONS INDUSTRY
IN PROVIDING CABLE TV SERVICE IN THE UNITED STATES

by
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Submitted to the Sloan School of Management
in Partial Fulfillment of
the Requirements for the
Degree of
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ABSTRACT

Since the breakup of the Bell System, the Regional Bell
Operating Companies have grown to see themselves as something
more than just utilities. They view themselves as modern,
competitive telecommunications companies which will evolve, if
allowed, into information services companies with integrated,
broadband digital capabilities. The first logical step in the
expansion of their services in that direction is to provide
cable television service. Revenues from cable television would
help justify the large investment which must be made to deploy
fiber optic technology to the home. However, numerous barriers
stand in their way.

Although several government agencies now publicly favor
removing some or all of the constraints on the RBOCs imposed
by the Modified Final Judgement and the 1984 Cable Act, the
cable tv industry is actively lobbying to keep those
constraints in place. They fear RBOC entry into cable
television will unleash competition into an industry which is
currently comprised of a group of unregulated monopolies.

Meanwhile, the US Congress, whose members argue over the
politics and microeconomics of these issues, continues to
allow the US Circuit Court of the District of Columbia to
assume the strongest voice in setting national
telecommunications policy.

The consequences of the choices that must be made by those
in government are far broader than the domestic microeconomic
issues effecting the handful of industries involved. The
choices to be made will dramatically influence the future
telecommunications infrastructure of the United States with
serious implications for the US's role in the global economy
which is presently taking shape.

Thesis Supervisor: John F. Rockart
Title: Senior Lecturer
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A. Introduction

This thesis explores the strategic issues and prevalent thinking of the major players regarding the entry of the Telecommunications Industry into the Cable Television Business in the United States. A chapter is dedicated to each of the four major "stakeholder groups" participating in the growing national debate over the future of the Cable Television Industry. They are:

- The Telecommunications Industry
- The Cable Television Industry
- The Television Broadcast Industry
- Federal and State Government

The issues described in this paper are receiving serious attention by each of these groups. While some of the companies and/or trade organizations in each group are taking very public positions, other have yet to be heard. Its clear from the interviews conducted and the literature review that no strong consensus exist among the major players in any of the above

1 Most of the emphasis is placed on the Federal Government since the issues are principally those of National Policy and direction.
Within the Telecommunications Industry, the Regional Bell Operating Companies (RBOCs) are the most active, vocal and aggressive in advocating their position - the lifting of all of the legal and regulatory constraints preventing them from participating in the Cable TV business. Since they see the expansion into other lines of business related to telecommunications as the most logical way to maintain significant and profitable growth, the RBOCs are particularly interested in having the debate come to a satisfactory, and early, conclusion.

The existing Cable Industry, which perceives only threats to its future growth opportunities by Telco entry into its line of business, is satisfied with the Status Quo and would like for all of the attention currently being given to their industry to subside.

The Broadcast Industry, seeing its share of the TV audience reduced to a historical low, would prefer to see only itself in the television business. However, recognizing the certainty of change, the industry is uncertain as to whether its best interest lies in reaching strategic alliances with the Cable Industry or the Telecommunications Industry.

Within the US Congress, all points of view are represented, with each stakeholder group having a "champion" to advocate its position. However, since most members of Congress do not share the industry's sense of urgency over resolving these issues, it
is difficult to determine if there is any consensus growing within either house.

The position of the Federal Communications Commission is more clear as it generally advocates loosening the constraints placed on the RBOCs by the Modified Final Judgement (MFJ), allowing them to participate in the cable industry and a consistent belief "that in the long term market forces will best promote the interests of viewers or consumers."³

The position of the US District court in Washington, which has jurisdiction over the Modified Final Judgement has been one of consistent opposition to allowing the RBOCs to venture far from the provision of basic telephone service.

This thesis begins with a chapter on the background and history of the Cable Television Industry in the US in order to give the reader an understanding of how the current industry structure and current inter-industry relationships evolved. Figure 1-1 provides a view of the Information Services market, showing the relative positions of the Telecommunications Industry and the Cable TV Industry. An underlying hypothesis of this thesis is that both industries will ultimately expand their scope to provide the full range of interactive digital services.

---

² The agreement between the US Department of Justice and AT&T which broke up the Bell System.

³ Notice of Inquiry Docket No. 89-600, pg 5.
which will constitute the Information Services industry at some time in the future. The question for both is when? and how?

B. Methodology

The primary sources of information for this thesis were news paper and periodical articles published during 1988 and 1989, as well as interviews with: 1) RBOC executives, 2) government officials representing the FCC and the US Congress and 3) representatives of the National Association of Broadcasters (NAB) and The National Cable Television Association (NCTA). Also, various position papers and inquiries prepared by the FCC and the National Telecommunications Information Administration (NTIA) and pending legislation were reviewed.

Some of the people I spoke with asked for anonymity and therefore when they are quoted, no specific reference is made as to the individual. However, since all of those interviewed were either in a position to make key strategic decisions for their respective organizations or were in strong advisory positions, I am confident that their points of view and attitudes will have a significant influence on the future role of the Telecommunications Industry in providing video entertainment services in the United States.

The conclusions I have reached are strictly my own and represent a synthesis of the points of view which have been shared with me and the information I have investigated.
Information Services

Digital

TECHNOLOGY

Analog

Interactive Digital Services
HDTV, HES
DTS, DTV
HM&S, HCS

Standard Telephone & Television

Narrow Band

BANDWIDTH

Broad Band

TV = Current Television, cable and broadcast

TELCOM = Current Telecommunications Service

HDTV = High Definition Television

DTS = Digital Telephone Service

HES = Home Entertainment Service

DTS = Digital Television Service (Conventional Format)

HHCS = Home Health Care Service

HM&S = Home Monitoring & Security

Figure 1-1

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CHAPTER TWO
A BRIEF HISTORY OF THE CABLE TELEVISION INDUSTRY

A. The Industry

Cable Television Service developed in the 1940's as a delivery service for broadcast channels for people living in remote parts of the United States where broadcast television signals could not be received satisfactorily. As technology improved the efficiency and cost effectiveness of the service, the industry grew and expanded, and by 1952 it served approximately 14000 subscribers in 70 communities.¹ By 1955 with only .5% penetration and 400 systems, the industry was serving 150,000 subscribers. Partially as a result of government intervention to protect the fledgling industry, the cable industry subsequently has shown extraordinary growth. Today it serves approximately 55.5% of the 90.4 million households in the US which have television sets and passes more than 80% of all households² (see Figure 2-1). The Cable Television infrastructure has developed into the second largest wired network in the country - second only to the telephone network. However, other than in terms of ubiquity, comparisons of the two networks is difficult since their respective architectures and technologies are quite different. With the deployment of

¹US General Accounting Office Report to the Chairman, Subcommittee on Telecommunications and Finance, August 1989.

optical cables, their technologies, if not their architectures are beginning to merge.

Cable Industry revenues have grown even more dramatically than penetration, increasing by 128%\(^3\) between 1984 and 1988. Contributing to this increase were revenues from advertising, which are expected to reach nearly $2.0 Billion in 1989 and $4.0 Billion by 1994. This compares to broadcast network revenues of $9.6 Billion in 1988.\(^4\) However, the major sources of revenue growth have been increases in both the number of subscribers and in basic rates charged for service.

Due to the high initial cost of constructing facilities, and the relatively low "cash" cost of operating a cable system, cable companies tend to experience high operating cash flows\(^5\) and low returns on assets. For example, in 1988 the operating cash flow margins\(^6\) for publicly reporting cable television companies was 36.8%, the culmination of a five year period in which the compound growth in operating cash flow was 27.9%. However, this extraordinary performance for these publicly reporting


\(^5\)This occurs since depreciation is such a large portion of their operating expense.

\(^6\)Defined here as "Operating Cash Flow as a percent of revenues."
companies, produced pretax returns on assets of only 6.4%.\(^7\)

Although the industry began as a transport vehicle for signals which were available "over the air," increasingly programing has evolved as a fundamental part of the industry structure. According to Ralph Baruch, former chairman of Viacom, the cable industry was spending about $2 billion annually on programing in 1987 (about one-third what ABC, NBC, CBS, and Capital Cities/ABC spend). This is expected to grow to nearly $6 Billion by 1990.\(^8\) This increased involvement in programing underlies many of the conflicts which exist between the cable industry and the broadcast industry. (These are discussed in Chapter 5.)

Predictably, the rapid growth, consolidation and vertical integration of the industry, in the eyes of many, is becoming a major public interest concern.

Finally, since the fundamental goal of television, whether cable or broadcast, is to deliver audiences to advertisers, the most significant growth statistic is that of audience share. In the 1988 - 89 season, cable's share of the viewing audience rose to 24% as the share for the three major networks fell to an all time low of 61%. This of course has significant implications for the future growth of advertising revenues in the respective industries.

---

\(^7\) Communications Industry Report, pg 51.

GROWTH IN CABLE TELEVISION SUBSCRIBERS
1965 – 1990

Figure 2–1

Note: Data represents January 1 levels.

1990 figure projected based on November 1989 actuals.
B. Government Involvement

As with the telephone industry, Government has become deeply involved with the Cable TV industry through both administrative regulation and through legislation, at the federal, state and local levels. Consequently, the regulation of the Cable TV industry has become increasingly complex. The following is a brief overview of the highlights of the evolution of government involvement with the industry.

Federal

Federal regulation of the industry began in the mid 1960s as concerns over the implications for television broadcasters grew. Although, at that time most cable providers carried only broadcast channels, penetration was increasing and satellite technology was evolving. The potential for cable systems was becoming apparent, particularly to the broadcast industry which was beginning to pressure the FCC to take protective action. In 1966 the FCC asserted jurisdiction over all services derived from broadcasting, including Cable TV and in 1969 established the "must carry" rules\(^9\). (The US Appeal Court in the District of Columbia ultimately found this in violation of the First Amendment rights of the Cable companies.) In 1972 the FCC expanded its rules governing the Cable Industry, including a prohibition on cross ownership of cable companies by telephone

\(^9\) The "Must Carry" rules required that Cable TV operators carry the broadcast channels available in their operating area.
companies. At the same time it established standards for local governments to follow when franchising cable systems.

The most significant intervention by the government occurred in 1984 with the passage by the US Congress of the "Cable Communication Policy Act of 1984". This Act essentially codified the rules established by the FCC in 1972. Although its express purpose was to clarify the relationships between federal and local roles in regulating the Cable Industry, as stated in the Act, the intent of congress was to establish a regulatory scheme to ensure that the cable industry would be allowed to develop in an "atmosphere free from unnecessary and economically burdensome government regulation."

The major provisions of the "Cable Act" are the following:

1. Most local authorities could no longer regulate cable rates but could regulate other cable activities as in the past. These included, franchise renewals, numbers of channels, capacity allocation, service quality, and facility construction.

2. Allowed franchise fees to increase by 3 to 5% of the cable operators revenues.

3. Deregulated cable rates in those areas where effective competition existed. (The FCC defined "effective competition" to mean that subscribers had the alternative to receive three over the air channels using the subscriber's antenna.)
B.1 Pending Congressional Action

As of January 1, 1990, there were thirteen bills pending in the US Congress on the subject of Cable Television - six in the Senate and seven in the House. The changes embodied in these bills range from re-regulation of the cable rates to allowing the Telecommunications Industry to provide cable services including programing. It is unlikely that any of these bills will be considered early in 1990 since the FCC, the NTIA and the Government Accounting Office (GAO) currently have studies underway concerning public interest issues surrounding the cable industry. Legislators will want to have the opportunity to review the results of these studies and recommendations before acting. Legislative changes to the rules governing the cable industry are likely to be included in revisions to the "Cable Act" late in 1990 or in 1991.

The Cable Act requires that the Federal Communications Commission conduct a study on the effects of the act and that it submit a report and recommended changes (legislation) to the Congress no later than October 28, 1990. To that end, the FCC issued, on December 29, 1989 a Notice of Inquiry\textsuperscript{10} to solicit comments from all interested parties on the full range of Cable Television issues, including: The franchise process; Competition; and Rate Regulation.

\textsuperscript{10} FCC 89-345, "In the Matter of Competition, Rate Deregulation and the Commission's Policies Relating to the Provision of Cable Television Service."
B.2 State Government

State governments have taken a very wide range of positions on the performance of the cable industry. For example, ten states have gone on record supporting the removal of cross ownership restrictions.\textsuperscript{11} Five states and the National Association of Regulated Utility Commissioners (NARUC) have questioned the adequacy of "non-structural" safeguards in preventing telephone companies from cross-subsidizing Cable services from telephone services. And nine states and NARUC have commented that they do not believe the FCC has the authority to preempt state regulation of telephone services provided by cable system operators.\textsuperscript{12} Given this wide range of positions and priorities, Federal legislation and control seem necessary if there is to be a consistent national policy that encourages the development of the industry.

B.3 Municipal Government

The major issue at the municipal level involves protection of the present franchise arrangements...particularly the revenues generated from the municipalities' franchising authority. Interestingly, that authority is based in the municipality's responsibility to protect the "public domain"

\textsuperscript{11} Based on comments filed in the FCC's Telco/Cable Cross-Owenship proceeding CC Docket No. 87-266.

\textsuperscript{12} Ibid.

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(i.e. to control who digs up the streets to lay cable, how much wire is strung through the air, etc., as well as issues involving public health and safety). However, if television signals were to be transmitted over telephone lines where right of ways were already established and facilities already in place for telephone service, and cable television operators delivered their signals via this network, the basis for the franchising authority of the municipalities regarding cable tv would be in question. Regardless of the requirements of federal laws (i.e. the 1984 Cable Act), that authority could be challenged on Constitutional grounds.
A. The Dilemma

Since the breakup of the Bell System on January 1, 1984, the Regional Bell Operating Companies have grown to view themselves as something more than public utilities. They now see themselves as high tech, market oriented companies and at far greater risk than when they were part of the world's largest corporation. It can be argued that this change in corporate self-image is a predictable result of the same forces which precipitated the break up of the Bell System -- the rapid evolution of communications technologies, the merging of the technologies of computers and communications and the rapid decline in the cost of technology. These challenged the natural monopoly status of the telecommunications industry, making competition within the industry economically possible.

With the break up of the Bell System, the telephone company subsidiaries of the Regional Bell Operating Companies (RBOCs), began experiencing competitive erosion of their revenues, and the loss of business customers to competitive alternatives. Given the difference in cost structure, the absence of price averaging and the absence of the system of subsidies which were embedded in the tariffs of the telcos, it was relatively easy for competitors to cream skim. Even as they developed and offered new services such as public packet switching,
alternative products such as premise based Local Area Networks were developed and improved by competitors.

The senior managers of the RBOCs were facing a problem to which, until now, their businesses had been relatively immune—how to produce profitable growth, which their shareowners and employees expected (6-10%), when their core business was growing at only 2 to 4% annually.

Since the approach to this problem has and will vary from RBOC to RBOC, there is no single industry answer. Some of the RBOCs have pursued diversification into areas very different from their core businesses, while others have attempted to expand their existing business by stimulating more demand for existing services. However, with five years of post-divestiture experience behind them, there are growing similarities to the way the problem of sustainable growth is being defined, to the solutions envisioned and to the strategies being contemplated. For example, the RBOCs interviewed seemed to agree that growth in their companies would be achieved through the expansion of the scope of their core businesses rather than from expansion into new enterprises. Not all agree on the opportunities available or the industry's ability to negotiate the legal and regulatory barriers. However, each of the RBOCs sees some role for their company in the provision of cable television service. Judgments about timing and the nature of their involvement vary between companies based on different expectations concerning regulatory changes, technology costs and market opportunity.
Given the similarities of these companies with regard to culture, political environment, size, technology and background of the senior managers, it is not surprising that they see similar solutions to similar problems. Therefore, in order to present the collective viewpoint of the industry and to avoid identifying the specific positions of specific companies or individuals with whom I talked and who requested anonymity, I will do so through the eyes of a fictitious RBOC, "K-BELL." While K-BELL's approach and strategy does not represent the point of view of any one company, I believe, based on my interviews with RBOC executives and public accounts of their positions (speeches, periodical reports, etc.), that it does accurately reflect the dominant thinking, issue-by-issue.

B. K-BELL, INC.: A Strategic and Economic Perspective

B.1 Background

K-BELL officially came into existence on January 1, 1984 as a product of the agreement between the US Department of Justice and AT&T (the Modified Final Judgement -- "MFJ"), which divested AT&T of its operating telephone companies. K-BELL's assets at inception were approximately $12 billion with revenues in the first year of $8.0 billion.

K-BELL is a holding company which at the time of divestiture owned five operating telephone companies. However, recognizing that these telephone companies would produce only
moderate to low growth but an abundance of cash, and with a primary goal of increasing shareholder value, K-BELL set out on a strategy of growth through acquisition. During its first four years it bought and/or sold twenty smaller companies. The contribution these companies made to the total revenue stream is indicated in Figure 3-1 below.

Fig. 3-1

In 1984, these expansion companies accounted for approximately .5% of total revenues. By 1988 they were

Shareowner value at K-BELL is defined as the dividend yield he receives from his stock and the price appreciation he sees in the market place.
producing only slightly more than 5% but as a group were less profitable than the overall corporation.

Within its operating region, K-BELL's telephone subsidiaries served over 80% of the market for telephone service.² They were, of course, regulated monopolies and their earnings were subject to regulatory control. While some progress had been made since divestiture in relaxing controls on those portions of telephone service where it could be shown that significant competition existed, overall the companies had only modest opportunity for sustained earnings growth. However, on the strength of its steadily improving "returns to its share owners"³ which had significantly outperformed the S&P 500 since divestiture (see Figure 3-2), K-BELL's market price had risen sharply since 1984. Correspondingly, market to book ratios had improved as had the "Cost of Equity -- Return on Equity" spread (see Figure 3-3).

The problem facing K-BELL was that much of the improvement in returns was achieved through expense reductions associated with eliminating "fat" accumulated over years from operating as a "cost plus" regulated monopoly. While there still existed some opportunity for further cost cutting, growth in shareowner value could not be sustained on that basis. New

² The other 20% were served by numerous small, independent telephone companies.

³ "Return to its shareowners" is defined here as cumulative dividends plus market appreciation.
sources of revenue had to be found.

As K-BELL matured and evaluated its competitive environment, evaluated its strengths and weaknesses and evaluated trends in Federal and State regulation, its senior managers recognized that the greatest opportunities for producing sustainable growth was in the expansion of the scope of its existing core business.

Fig. 3-2
With the proliferation of home computers, the growing popularity of cable television and the state of the art of telephone transmission technologies, K-BELL saw an opportunity. If it could overcome regulatory and legal barriers, and redefine its mission and its market, it could conceivably achieve sustained growth significantly in excess of the 4% expected for basic telephone service well into the next century.

B.2 New Mission; New Market

K-BELL's historical definition of itself was that of a telecommunications company; that is, its mission was to provide electrical connections between its customers for the purpose of communicating voice and relatively low speed data. It was in
this business and in this market that K-BELL could expect growth of no more than 4% and in which it was dominant -- and regulated. (See Figure 3-4, below.)

**Local Telecommunications**

*Growth vs Market Share*

K-BELL recognized that if it redefined its market as "Information Services," there would be enormous opportunity for very profitable growth. Cable Television, with annual Industry

---

4Information Services can be defined to include not only voice and low speed data but also video and high speed data. The logical form of transmission would be digital, making voice, video and data indistinguishable on the network and intuitively, given rise to significant economies of scale and scope. Information Services content could include such services as telephone, television, educational and health care services and any others that the market demanded.
revenues of approximately $14.1 billion\textsuperscript{5} and compounded growth of more than twenty percent for the past five years was currently the most attractive segment of the Information Services market and was arguably a natural extension of K-BELL's technology and expertise. (See Figure 3-5.) The existing cable companies represented large competitors which were already in place but their intentions regarding entry into the larger information services market was unknown. However, if they had such plans, direct competition between the two industries was inevitable eventually since the largest portion of the information services market for the foreseeable future was telephone service.

\textbf{INFORMATION SERVICES}

\textit{Growth vs Market Share}

\begin{center}
\includegraphics[width=0.5\textwidth]{fig3-5}
\end{center}

\textit{Fig 3-5}

\textsuperscript{5} The Kagan Cable TV Financial Databook, June 1989, p 16.
B.3 Industry Attractiveness

The Cable TV segment of the developing Information Services Industry seemed attractive for a number of classical reasons. First, there were relatively high entrance barriers. (They were especially high for the telecommunications industry and are discussed in more detail below.) Second, Cable TV was a high growth industry with the potential for substantial growth for many years. Third, there was strong dissatisfaction among consumers over the quality and price of services currently being provided. (K-Bell believed that it could differentiate its services through both price and quality.) Fourth, there was considerable and growing conflict between the cable industry and the broadcast industry. K-Bell could potentially soften that conflict by providing a transport service for both. In which case, these potential competitors might actually view Telco entry more positively.

However, unless K-BELL was allowed to provide programing as well, it could not be certain that any demand for its transport services would exist. Its enormous investment in such capabilities could be "stranded". In other words, the buyers would be too powerful.

Barriers to Entry

The entrance barriers for the regulated telecommunications industry were different than they were for others and there were more of them. That is, in addition to the barriers which
everyone else faced, there were the additional barriers of legislative, regulatory, and judicial restrictions.

These barriers only existed relative to content control. That is, video transport was allowable under current rules. However, if K-BELL entered only the transport business, its customers would be its principle competitors -- the programing portion of the Cable TV Industry. If K-BELL could provide both transport and programing, it could guarantee a market for its transport service from its own programing division as well as from any of the other cable companies who were willing to purchase transport service from them. However, because of the growing animosity between the two industries, it was unclear as to whether any cable company would want to support K-BELL's entry into this line of business by buying transport service from it -- even if it was a more economical alternative. Consequently, without some reasonable certainty of a market, K-BELL's management was concerned about making a large investment to enhance its network capability. Publicly a "transport only" scenario was argued as unworkable.

However, if these barriers could be overcome, the others were sufficient to limit access by many competitors. These barriers included the high capital cost to build a broadband network, local franchising requirements, economies of scale and, for the short term, the significant uncertainty of changing industry ground rules as congress and the FCC considered everything from re-regulating rates to new approaches to forcing
the industry to carry the signals of all local broadcasters. K-Bell's executives felt that they could probably overcome the regulatory barriers as a result of increasing public dissatisfaction with cable service and rates and a growing sentiment among policy makers that the cable industry no longer needed protection.

A potential barrier to the expansion of cable companies into the broader Information Services market, including telephone service, was the large amounts of capital required to construct a network with the necessary capabilities. The high debt which many were carrying as a result of the consolidation of the industry over the past five years would aggravate this problem. For K-BELL, building a ubiquitous fiber based integrated broadband network represented a substantial risk, but far less of a risk than it would for the Cable Industry which was already heavily debt financed. Given the growth in the demand for cable services and the relative sizes of the companies involved, K-BELL was clearly in the best position to build a ubiquitous broadband network. (See Figures 3-6 & 3-7.) Among K-BELL's risk was that, given its strong financial position, it had many investment alternatives. Investing in network enhancements to provide broadband services would have high "opportunity cost," which might not be offset.

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6 The debt history of the Cable TV companies is covered in more detail in Chapter 4.
"Cracks" in the Regulatory Barriers

While high entrance barriers generally add to an industry's attractiveness, the additional entrance barriers for K-BELL, which were the product of governmental action, would have discouraged even the boldest RBOC visionary (see Appendix 1), were it not for the public positions being advocated by many policy leaders in the government -- positions which advocated the removal of those barriers.

For Example, the FCC was publicly advocating more freedom for the RBOCs, and in its Notice of Further Rule Making\(^7\) in September, 1988 specifically commented that it was no longer in the public interest to bar Telco ownership of cable TV companies. In December, 1989, in order to fulfill its requirement to conduct a study and make recommendations to the Congress regarding changes in the "Cable Act", the FCC had issued another Notice of Inquiry\(^8\) in which it is seeking comments on every aspect of cable service in the US, including competition and Telco entry into the Cable TV business.

In addition, the National Telecommunications and Information Administration (NTIA), which had previously advocated a common carrier role for local telephone companies in

\(^7\) FCC Docket 89-345, In the Matter of Competition, Rate Deregulation and the Commission's Policies Relating to the Provision of Cable Television Service, 12/29/89, pp. 88-249.

\(^8\) Ibid.

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providing what it called "video dial tone,"\textsuperscript{9} released a Notice of Inquiry in December, 1989\textsuperscript{10} to solicit comments on a "Comprehensive Study of the Domestic Telecommunications Infrastructure." In the Inquiry, it ask for comments on such concepts as 1) the role of telecommunications in the US's ability to compete internationally, implying that the US might be falling behind other nations in the development of our telecommunications infrastructure; 2) incentives to modernize the telecommunications infrastructure; and 3) the role of telephone companies in providing cable television services.

The implications of the study are that the NTIA is concerned about the progress the US is making in developing its Telecom infrastructure. Given the past positions of the NTIA (i.e., proposing the video dial tone concept), a report encouraging changes in laws and regulations permitting more freedom for the Telecom Industry to develop and promote information services is very possible.

Furthermore, the Chairman of the FCC has been advocating a "Price Cap" form of regulation by January 1, 1991 for the local telephone companies.

On the state level, Public Service Commissions around the country have been experimenting with alternative forms of regulation and granting the local telephone companies more


\textsuperscript{10} Docket No. 91296-9296.
freedom in price setting and more flexibility in providing new services.

**Financial Comparisons**  
**Telecommunications vs Cable TV**

<table>
<thead>
<tr>
<th></th>
<th>Pre Tx Op Inc ROA (%)</th>
<th>Op Cash Flw ROA (%)</th>
<th>Asset Turnover</th>
<th>Debt to Tot. Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable Ind.</td>
<td>6.4</td>
<td>13.8</td>
<td>.4</td>
<td>85</td>
</tr>
<tr>
<td>Telcom Ind.</td>
<td>7.3</td>
<td>15.9</td>
<td>.15</td>
<td>52.4</td>
</tr>
</tbody>
</table>

Fig 3-6

**Technology**

An analysis of the technology of the future Information Services market further illustrated the differences in the current positions of K-BELL and its competitors, as well as the differences in their respective entry barriers. (See Figure 3-7.) K-BELL believed that Cable TV in the near future would be provided over Fiber Optic networks as would all Information Services. The Cable Companies were currently using Coaxial cables (coax) to serve their customers. K-BELL would not enter the cable business with coax but would deploy fiber. It was in fact already deploying fiber in its voice network for interoffice trunk circuits but so far could not economically justify deployment to residence customers only for telecommunications.
services\(^{11}\). Furthermore, it was believed that the cable companies would soon begin to use fiber for new construction, but would have difficulty financing the replacement of the existing coax. This would also delay the Cable industry's transition to digital transmission. Figure 3-7 depicts the relative positions of K-BELL and the cable industry relative to the Information Services market.

**B.4 K-BELL's Value Added Chain\(^{12}\)**

With an understanding of the opportunity at hand and a strong and intuitive belief that it could successfully enter this new business, K-BELL then began developing a strategy. A look at its Value Chain (Figure 3-8) seems to support K-BELL's evaluation in its ability to enter the Cable business.

Clearly, from the standpoint of experience, internal infrastructure, technology management, and operations, K-BELL is probably as well equipped to enter and be successful in the Cable TV business as any company already in the business or any potential entrants -- certainly with respect to the transport end of the business. This is precisely why the FCC, and subsequently Congress, in an effort to protect the fledgling

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\(^{11}\) It is believed throughout the industry that fiber deployment to the home will be the most economical choice within two years for new construction but that without additional revenues to support it, replacement of existing wire facilities with fiber is years away.

\(^{12}\) See Hax and Majluf (1984) for a discussion of the Value Added Chain.
Telcom = Present Telecommunications Industry

CATV = Present Cable Television Industry

Fig 3-7
cable industry, chose to bar the Bell System from participating in its early stages of development.

The following is a brief review of K-BELL's Value Added Chain relative to Information Services Transport.

Support Activities:

Firm Infrastructure

K-BELL is a company which was built and organized around operating a very large, capital intensive network. The network which is already in place is being modernized in ways which will be compatible with transporting video signals between any points connected to it. Since Network Services involve very large fixed cost and very small marginal cost, both economies of scale and scope should work to K-BELL's favor.

Human Resources

K-BELL's employees may also provide an advantage over its competitors. They are, for the most part, dedicated, career minded employees who share the company's traditional commitment to high quality service. These employees are aware of the increasing competition in their traditional line of business and are sensitive to its implications for their personal success. Finally, as a result of years regulatory and legislative intervention in their business, K-BELL's lobbyist are skilled and "well connected," an asset neither well understood nor well developed by the cable industry -- although they are improving
### Value Chain For an RBOC (In the Cable TV Business)

<table>
<thead>
<tr>
<th>Firm Infrastructure</th>
<th>Human Resource Management</th>
<th>Technology Development</th>
<th>Procurement</th>
<th>Operations</th>
</tr>
</thead>
</table>
| - Access to Consumers  
- Experience in Network Architecture  
- Economies of Scale & Scope | - Prof. Procmnt. Staff  
- Prof. Career Employees  
- Good Intern.  
- Tng. Culture | - Exper. with Fiber Tech  
- Natural Ext. of Current Tech/Serv | - Large  
- & Profl. Buyer  
- Long Stndg Retnshps.  
- Well Org Proc Staff & Legal Dept | - "100 yrs" of Netwk. Exper.  
- Shared Deliv. Capability  
- Ubiquitous Network | - Emps aware of competition  
- Skilled Lobbyists | - Tech Excel. As Mkt. Tool | - Fiber Network will provide  
superior quality/reliability over currently installed technology  
- Opportunity for oth services | - Well Trained Service  
Force with Transferable Skills |

**Inbound Logistics**  
**Outbound Logistics**  
**Marketing & Sales**  
**Service**

*Figure 3-8*
rapidly.

**Technology**

As mentioned previously, K-BELL has already begun to deploy fiber optics in its "backbone" trunking network. It has experience with both fiber electronics and the actual fibercable. Although K-BELL is not allowed to manufacture, it has had an opportunity to work closely with most of the major component vendors and evaluate the various system architectures for both quality and reliability.

**Procurement**

Given K-BELL's size and purchasing power, it has been sought after by the major fiber optic vendors and has develop good relationships and good supply lines with these vendors. Cable companies on the other hand, have been reluctant to deploy fiber although given the architecture of their networks, the cost should only be marginally higher. Consequently, they have little or no experience with the necessary supply channels and, therefore, have not developed them.

**Primary Activities:**

**Inbound Logistics**

If K-BELL offers only transport service, its inbound logistics should be trivial and are discussed above under procurement. However, if K-BELL offers programing services as
well, then it will be entering a new logistical area in which it has no experience. Program sources will have to be developed and contracts signed. K-BELL's strength in this area is derived from its professional procurement organization and strong legal department which should be able to investigate terms and develop contracts with vendors.

**Operations**

Its operations strengths can be summed up by saying "K-BELL has a hundred years of experience" in providing network based services. However, it has no experience with programming. (The industry feels it can overcome this through partnerships with experienced programers.

**Outbound Logistics**

K-BELL already has a presence in nearly every home in its serving area. Right-of-ways and access arrangements already have been established.

Although there will certainly be a requirement to keep the cost of its telephone services separate from its cost for other information services, including cable TV, the fact that the same network will be used for multiple uses will lower the incremental cost for all services as cost will be allocated among them.
Marketing and Sales

Given the extreme prices and profits of the cable industry, and the service reputation of K-BELL's telephone subsidiaries, marketing should not be difficult. K-BELL could easily price below its competitors, and still make profits far greater than its existing businesses. Eventually, this would force the existing cable companies to cut their margins, but the service advantage and the relative "good will" which K-BELL has among its customers should be useful in marketing its services.

Service

Although its often taken for granted by the public, when pressed, most telephone customers agree that telephone service is excellent. Cable TV service provided by K-BELL's subsidiaries will be at least as good since the same network, facilities and technology will be used.

B.5 Alternative Strategies for Growth

Each of the RBOCs feels that other services and technologies will play a role in future growth for their companies. The two most commonly talked about are Integrated Services Digital Networks (ISDN) and Signaling System 7.

The ISDN architecture which was the focus of much attention in the early to mid 1980's, seems to command little confidence in the RBOCs today except among those who have been closest to the concepts and technologies. The generic term "Integrated
Services Digital Networks" is in fact exactly what the networks of the telecommunications industry are evolving into today, with voice and data being integrated, switched and transmitted in common digital formats. As this occurs increasingly throughout these networks, greater efficiencies will be realized, cost will be reduced and more money will be available for investment in other opportunities. However, the ultimate vision for ISDN is an Integrated Digital Broadband Network, which is exactly what has been discussed above as necessary for cable TV. Therefore, while some people in the industry argue that the industry should not be pursuing cable TV but look to ISDN to provide growth opportunities, they are contradicting themselves. (That is, Cable TV is the most logical, and potentially the most profitable, service which could initially be offered over a ubiquitous broadband ISDN.)

Regarding Signalling System 7, the backbone for what is referred to as the intelligent network, it is widely believed that it will provide the opportunity for growth by improving the efficiency of the network and by making possible a host of new services. One senior official responsible for planning in an RBOC said that he believes his company will experience ample growth as a result of the services possible through SS7, and that they need not pursue entry into the cable industry. While

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13 The demand for other services such as access to databases, access to real time medical services, etc. is too uncertain to motivate early investment in broadband facilities.
not all would agree with that position, they all agree that there will be revenue stimulation and improved efficiencies as a result of SS7. However, their enthusiasm is tempered by their experience selling custom calling services.\textsuperscript{14} A full discussion of the economics of SS7 is beyond the scope of this thesis.

One final point of view was offered: that the RBOCs have not done all they could to achieve the full revenue potential of the facilities they have in place. As an example, it was pointed out that Southwest Bell had an active and aggressive program under way to sell "second lines" to existing subscribers. The argument suggest that there are existing facilities in place that are idle; that the life styles of the American family today, with working couples and personal computers with modems, could benefit from two separate telephone lines; that nearly every family is willing to invest in multiple telephones and would invest in multiple lines if encouraged to do so; and that the potential for second lines is at least thirty percent. However, others were quick to point out that there is widespread belief in the industry that margins for providing second lines is at best small and, when any new facilities have to be constructed to satisfy demand, probably negative.

\textsuperscript{14} Throughout the country, when Custom Calling Services are made available to an area, the subscription rate has averaged between 20\% and 30\% with rates around $2.00 per service.
B.6 **K-BELL's Likely Strategy Implementation**

Since K-BELL's strategy for producing substantial growth in its business was to expand the scope of its core business by moving first into cable TV and then on into a host of information service offerings, it had to decide how it could achieve these goals given the many barriers. A number of steps had to be taken. They were:

- Support legislation which would free the Telecommunications Industry to own cable TV operations within their service areas and lift the content restrictions.
- Better articulate the concern to legislators, regulators and the public that the telecommunications infrastructure in the US is falling behind other countries due to Governments inability to formulate a national policy consistent with current technology and which provides incentives for the telecommunications industry to invest.
- Begin deploying fiber in the distribution network except where clearly uneconomical.
- Begin negotiations with local cable companies to buy their existing infrastructure and to lease it back to them.\(^{15}\) Overcome their arguments about reducing entry barriers by pointing out that they could use the

\(^{15}\)In so doing, K-Bell could integrate this infrastructure into their "video" network and overall architecture and could systematically upgrade it to fiber as economics and/or demand warranted.
proceeds from the sale to construct new barriers, i.e., lock up prime programming.

- Overcome broadcasters concerns about one transport supplier by offering to enter into long term agreements to carry their signals for a fair price, pointing out that such an arrangement will provide more ubiquitous coverage for their programming.

- Begin gaining experience in cable operations and programing by purchasing out of region and over seas cable operations which look like sound investments.

C. Conclusions

The scenario described in this chapter represents neither the plans nor point of view of any particular company, but based on interviews with five RBOCs, is close to a consensus viewpoint. Every concept and/or action described is at least being considered by two of the RBOCs interviewed.

It is, however, important to note that as a group the Telecommunications Industry is ambivalent regarding the timing of their entry into the Cable TV business. Some sense a greater urgency in moving ahead while others believe enhanced telecommunications services such as those offered through "the Intelligent Network" and made possible with Signalling System 7 will provide adequate growth for the decade of the 90's. In the view of the author, the Telecommunications Industry's collective indecision is its greatest liability.
CHAPTER FOUR
THE CABLE TV INDUSTRY IN PERSPECTIVE

A. The Current Environment

As the last decade of the twentieth century begins, the cable industry can find ample reasons to celebrate -- and to despair. After three years of rate deregulation, the industry finds itself with extremely strong cash flows, relatively good returns on assets and exceptionally good market prices relative to replacement cost ("q" ratio). The industry has been free to raise its rates and has done so -- on average 29% between January 1987 and October 1988, according to a survey done by the Government Accounting Office.²

1988 marked the third consecutive year that Cable TV revenues grew by more than 20%.³ Furthermore, between 1984 and 1988, the compounded annual growth in pretax operating income and growth in operating cash flows were 30.3% and 27.9%, respectively⁴⁵ (see Fig. 4-1).

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¹ The 1984 Cable Act deregulated the industry's rates effective January 1, 1987.

² National Survey of Cable Television Rates and Services, August, 1989.


⁴ Ibid., pg 53.

⁵ Because of the high cost of constructing a Cable TV network, annual depreciation charges are high. This coupled with the relatively low cash expense of operating a cable TV system, result in the high cash flows.
At the same time the Industry finds itself in turmoil and somewhat under siege. The public is increasingly outraged and vocal about what is perceived to be unfair price increases and poor service. Congress is responding and has numerous bills pending which affect the Cable Industry. The FCC, in order to fulfill its requirements under the 1984 Cable Act, has issued a "Notice of Inquiry" and is soliciting comments and recommendations concerning a broad range of Cable TV issues from

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6 FCC 89-600.
re-regulation of cable rates to competition within the industry. The already tenuous relationship between the Broadcast and Cable Industries seems to be deteriorating,\(^7\) and the Telecommunications Industry has begun lobbying hard to have the cross ownership and other restrictions lifted, thereby removing the political barriers to their entry into the cable business. Aside from the specter of competition in an industry that is essentially comprised of a group of unregulated monopolies, growth in new subscribers is beginning to taper off.\(^8\) Given the increasing political pressure to limit rate increases, any substantial future revenue growth will have to come from sources other than basic cable subscriptions. This is further aggravated by increasing programing cost.\(^9\)

**B. The Cable Industry's Reaction**

As 1990 begins, the cable industry is organizing itself more effectively to deal with these issues. The focal point for its

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\(^7\) In a January 1990 speech before the Washington Metropolitan Cable Club, Jim Mooney, of the National Cable TV Association threatened the Broadcast Industry with the possibility of dealing with the major three networks directly for affiliation. This was in response to what Mooney considered "cable bashing" by the broadcasters. Also, the National Association of Broadcasters recently went public with a four point position which favored RBOC entry into the transport segment of the Cable Industry.

\(^8\) According to the June 1989 edition of *The Kagan Cable TV Financial Data Book*, growth in basic cable subscriptions in the first half of the decade of the 90's is expected to be 18.8% as compared to 66.9% between January 1985 and December 1989.

organization is the National Cable Television Association headed by its President James P. Mooney. While Mooney's job is to deal with all the issues, he seems particularly sensitive to the issue of "Telco entry" into Cable TV. He has tried to convince broadcasters that the threat of telco entry is as great for their industry as it is for the cable industry. In an interview in May 1988 published in Broadcasting, the industry's principle trade publication, he said "...the impact on the entire television world of letting telephone companies into the TV business would be disastrous, and that includes broadcasting. If anything, I think broadcasters are even more vulnerable to the consequences of telephone entry into TV." However, when he addresses the issues of rate regulation, his comments are less emotional, and he speaks of "greatly increased sensitivity in the cable industry of the political downside of rate increases."\(^\text{10}\) He goes on to say that "I don't think that the industry is at a point yet -- or will necessarily ever get to a point -- where they would favor the resuscitation of price regulation." When it comes to telco entry, however, there is no question about the Mooney's position.

Given their adamant opposition to telco entry into cable TV, it would appear that the NCTA views this as their greatest threat. This conclusion seems supported by the NCTA's action in the Fall of 1988, when it announced plans to surcharge each of

\(^{10}\) Ibid., pg 38.
its members 15% to fund the effort to block telco entry. A further example of their efforts to slow or stop telco entry was their intervention in Bell South's Triennial Depreciation Prescription proceedings with FCC and the Florida Public Utility Commission in which the cable industry argued that the reduced service lives for wire distribution facilities was unwarranted and unreasonable.

C. The Nature of the Threat

To evaluate possible strategic responses, its necessary to ask: Why does the Cable Industry feel so threatened by Telco entry into the cable business? There are two possible answers. Neither is trivial. Considering each can help explain actions by the industry's major players.

The first is the most obvious: The immediate threat of direct competition from the telephone companies and/or the creation by the telephone companies of delivery channels for other competitors. The second is: the threat of telco preemption of the cable industry in providing information services to the home. Each is discussed below.

\[\text{11 Broadcasting, October 3, 1988.}\]

\[\text{12If the cable industry could slow the capital recovery of the telephone company's investment in wire facilities, it would be more difficult for them to justify economically the deployment of fiber optic cable to the customer's premises.}\]
C.1 The Threat of Direct Competition from the Telcos

The Cable industry has a great deal more to lose from competition than market share. Cable companies have been selling for prices approaching $3000 per subscriber. Such prices are several times replacement cost and would be difficult to rationalize for a fully competitive firm. Purchase price as a multiple of cash flow reflect the same phenomenon and are depicted below in Figure 4-2.

![Cable TV Sales History Chart]

Source: The Cable TV Financial Data Book, June 1989

Fig. 4-2

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13 The highest price per subscriber paid for a cable company occurred in 1983 when Times Mirror Inc bought a cable system from American/Phoenix for $90,000,000, or $4091 per subscriber. More typical prices are around $2000 per subscriber. However, prices between $2500 and $3000 are not uncommon.
While monopoly profits are difficult to measure, many critics of the industry argue that the high ratio of market price to replacement cost of most cable companies is a good indicator of excessive market power. In other words, the inflated price is justified by buyers on the basis of the monopoly profits the company will earn.

Certainly if the telephone companies were to receive waivers on cross ownership from the FCC, successfully have the 1984 Cable Act changed and get the Federal District Court in Washington to lift the MFJ content restrictions, then the Telephone companies potentially could provide serious competition to the existing cable companies. However, the judge who has jurisdiction over the MFJ, based on past rulings, is much less likely to lift the content restriction than is the Congress or the FCC to act. Unless all three act consistently, the RBOCs are restricted. However, these restrictions apply to the content (i.e. programming) portion of the cable TV business; not to transport. In fact, the telecommunications industry is free today to provide transport services for programs originated by others. However, they argue that without the option to do their own programing, they can have no assurance that any of the existing cable operators would lease their services. Therefore, with the uncertainty of being able to generate revenues, they are unwilling to make the very large investments necessary.

From the perspective of the cable industry, Telco entry into transport is a two edged sword which could have some advantages.
First, conceivably there would be some economies of scale. Possibly, the Telephone companies could deliver the cable companies' signals cheaper than they could, thereby reducing their operating cost. Telco provision of transport could stimulate new sources of revenues for the cable companies more quickly than they would otherwise occur (i.e. On Demand Video). From a more negative viewpoint, the Cable industry might see telco entry into their business as inevitable. Hence, by guaranteeing a market for telco transport services, they might slow down their push for programing freedom.

The major concern of the cable industry is that if the telcos provide transport service, any number of independent programers could gain access to customers by leasing transport service from the telcos. The local franchising arrangements, the major barrier to entry, would break down and the cable TV industry would become highly competitive. A solution to this, which is being widely discussed, would be for the RBOCs to buy the existing cable infrastructure and to integrate it into their networks, eventually replacing it with fiber. With the funds received for selling the infrastructure, the cable companies could create new entry barriers such as negotiating long term contracts with the most popular programing sources. While this could work for some of the larger cable operators, the smaller operators would find it difficult to interest programers in long term contracts or to finance such agreements through the sale of their infrastructures.
From the above discussion it is clear that there are various arguments and counter arguments regarding the immediate competitive implications of Telco entry into the cable business. However, the long term implications of Telco entry may offer a greater threat than promoting competition in the existing market.

C.2 TELCO Preemption of Interactive Information Services

Question: Does the Cable TV industry have the provision of interactive Information Services as a strategic goal? If so, when and how?

To evaluate this as a motive for the cable industry's opposition to telco entry requires a more careful strategic analysis of the cable industry's current position relative to the future Information Services market and the attractiveness of that market. This is done below by assuming that the long term strategic goals of the Cable TV industry is to become full service Interactive Information Services providers.

As the first logical step for the telecommunications industry into other segments of the Information Services industry would be to move first into Cable Television, it would seem the logical movement of the existing Cable TV industry into that broader market would be into telecommunications services. This is because, in spite of all of the talk about future information
services, the only two for which there appears to be any substantial demand currently are telecommunications services and cable tv (see Figure 4-3). Therefore, the following is an overview of the strategic issues associated with an aggressive strategy for the cable industry, which assumes its first move would be into telecommunications service and an assessment of whether the cable industry will take such a course.

The Attractiveness of Information Services

Considering the total information services market as defined in chapter one, it is clear that the demonstrated demand for information services in the current market is confined to two services: television and telecommunications. To evaluate the attractiveness of the telecommunications segment of the Information Services market to the Cable TV Industry, four considerations seem to stand out as most significant. They are: 1) competitors, 2) technology 3) entry cost and 4) government involvement.

Competition

Regarding competitors, the RBOCs dominate the market with approximately 80% of all telephone subscribers using their networks for local service and access to long distance carriers. The other twenty percent use smaller telephone companies of which there are approximately 1400 across the US. However,
Information Services

ODV = On Demand Video

PPV = "Pay Per View" Service

CATV = Current Television, cable and broadcast

TELCOM = Current Telecommunications Service

HDTV = High Definition Television

DTS = Digital Telecommunications Service

HES = Home Entertainment Service

DTS = Digital Television Service (Conventional Format)

HHCS = Home Health Care Service

HM&S = Home Monitoring & Security

Figure 4-3

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there are increasingly alternatives to local service, even within the local companies' franchise areas. Cellular service, Private Branch Exchange (PBX) equipment and a variety of features available on "smart" telephones are good examples of niche markets where competition has established a foothold. None of these niches are obvious extensions of cable tv technology; However, they do indicate an increasing willingness of state and federal regulators to see competition develop in the telecommunications industry.

Another competitive perspective is that of cost/price leadership. It is difficult to imagine how any company would significantly and consistently differentiate its product in a digital telecommunications industry. The quality of basic digital telephone service, as with compact disc players, will be almost indistinguishable between competitors. AT&T and the other long distance carriers have demonstrated this through their advertising. Immediately following divestiture most of the advertising focused on quality differences. With the increasing deployment of fiber optic systems by all carriers, advertising is increasingly focusing on price differences. Therefore it seems reasonable to expect that in the local telecommunications market, the scale economies of the existing telephone companies should give them a competitive advantage and allow them to compete on price. It should be noted that wages paid by the non-union cable industry are well below those paid by the RBOCs which are highly unionized. This would favor the
cable industry but it is doubtful that this advantage would be sufficient to overcome the scale advantage of the telcos. The bottom line is that in the commodity market of digital telephone service, price leadership might only mean mediocre profitability. Unless there are services to be offered that would allow a cable company to package and differentiate its services from those offered by its competitors, the telecommunications segment alone does not look attractive.

In summary, from the standpoint of competition, with a large, experienced and well established competitor already dominant in the marketplace for a commodity service, telecommunications does not appear an attractive area for expansion.

Technology

The technology to compete obviously exist. A fundamental question, however, is whether the cable companies would extend the capabilities of their existing broadband, analog network to include switching, or whether they would build a broadband digital architecture. The "Tree and Branch" architecture currently used in the cable networks is designed to optimize the distribution of video signals. However, such an architecture does not lend itself to interactive communications for numerous reasons. For example, the capacity does not exist for dedicated channels to each subscriber; repeaters in the network are unidirectional; and there is no switching functionality. Therefore, with the exception of the reuse of some facilities,
(i.e. coaxial cable for the drops) a new network would have to be built.\textsuperscript{14}

The existing telephone networks already have a head start with the deployment of broadband digital technology since they have been using digital fiber systems in their inter-office circuits for approximately ten years.

**Entry Cost**

Numerous studies have been done and models developed to evaluate the cost associated with the various alternative architectures. These studies generally show that less investment would be required by the cable companies to provide On Demand Video (ODV) and Pay Per View (PPV) service than would be required by the telephone companies to provide the same service. This is because the telephone companies would have to provide for voice capability as well. That is, these studies address alternative architectures for ODV and PPV functions and not fully interactive broadband digital capability necessary to support both voice "telephone" service, cable TV service and/or other Information Services which the market may demand. Such networks would require a major redesign and upgrade of both the telephone infrastructure and the existing cable TV.

\textsuperscript{14} Although some "visionaries" today are beginning to talk about "terabit" transmission rates changing the entire concept of switching, it is doubtful that such transmission systems would be designed around coaxial cable rather than fiber or that it would even be possible to transmit such high bit rates reliably over coax.
infrastructure. Since the telephone networks already have a great deal of fiber deployed,\textsuperscript{15} it is reasonable to expect that the telecommunications industry would spend marginally less to build functionally the same digital Broadband network as would the cable companies. Based on a study performed by the Department of Engineering and Public Policy at Carnegie Mellon University,\textsuperscript{16} the cost for to rebuild the local telephone network would be $1600 per subscriber. Therefore, it is expected that the cost to a cable operator would be somewhat higher. This contrast to the cost to build a cable television system using the current architecture and technology of $800 per subscriber.

For both industries, a rapid movement toward a fully integrated digital broadband capability would represent an enormous investment. Financing such an investment could be a major problem for the Cable industry given the substantial levels of debt the industry has taken on in the 80's. (See Fig 4-4.)

\textsuperscript{15} Raymond Smith, Chairman and CEO of Bell Atlantic, in a speech to the National Association of Broadcasters on May 1, 1989 said that Bell Atlantic already had deployed over 300,000 miles of fiber optic cable in its network.

Therefore, regarding entry cost, for the foreseeable future, entering the telecommunications segment of the Information services market would seem prohibitively expensive and would surely force the existing telephone companies to accelerate their modernization plans.

Nevertheless, each industry has reasons to migrate toward broader Information Services capabilities -- the telephone companies because engineering economics are beginning to favor fiber in the distribution plant for growth and the cable industry because of the relatively low cost of upgrading to a
fiber backbone\textsuperscript{17} given the corresponding improvement in service. Also, for the cable companies, selective deployment of fiber technology could produce revenue enhancing alternatives, position the industry to take advantage of future technologies for entry into interactive voice services and yet not drive the telephone companies to rapidly deploy fiber because of concern that the cable industry would beat them to the residence with fiber.

\textbf{Government Involvement}

Clearly a goal of the cable industry has been to minimize government involvement in their businesses. This can be seen in the successful lobbying effort of the NCTA with the passage of the 1984 Cable Act and their current intense efforts to defeat pending legislation, including legislation which would re-regulate cable rates. For the cable industry to provide telephone service it would have to first lobby successfully to change the cross ownership restrictions of the Cable Act (which would benefit the telcos as well) and lobby the FCC to change its rules on the subject. Assuming they were successful in these efforts, regarding the provision of telephone service they would subject their businesses to the regulatory jurisdiction of not only the FCC but certainly to the Public Utility Commissions in many states. The specter of being regulated as a utility

\textsuperscript{17} Ibid.

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with investment decisions being scrutinized and requirements to allocate cost between telephone and video service is certainly unappealing to cable operators.

Therefore, the increased government involvement in their businesses which entry into the telephone business would bring, makes such a move far less attractive.

C.3 Strategic Alternatives

Many of the players in the cable industry see other more promising alternatives for expanding the scope of their existing business which requires less capital, a more gradual deployment of technology and which takes advantage of the industry's monopoly position. These alternatives include enhancing the existing cable network to provide Pay Per View (PPV) capability and/or making the more extensive enhancements required for On Demand Video (ODV).

Enhancements for PPV are already underway and involve using addressable converters at the subscribers residence. The subscriber places a request for a scheduled movie with the cable operator via telephone and the converter at the customers premises is "turned on" by a signal sent by the cable operator. The drawback to this service is that many customers may see this as something which has been taken away from them rather than a new service and in any case the selection available will by necessity be substantially less than that which is available by rented video tapes.
The enhancements necessary for ODV involve providing for dedicated channels from the cable head end to the subscriber and a switching capability which does not exist today. Such enhancements to the cable infrastructure would not provide the capability for connecting any two points in the network for communications purposes but would be far more sophisticated than the tree and branch architecture which exist today. A network capable of ODV would have to be engineered based on some probability of blocking. That is, sufficient circuits would have to be available to meet peak customer demand during the busiest period without denying service to more than a design percentage of customers (i.e. 1%). Architectures which involve all digital vs digital/analog technologies for ODV have been studied.\(^{18}\) At high bandwidths (STS-48, 2.4gbits), ODV can be provided at approximately $930 per subscriber assuming 60% penetration. This estimate assumes 1.5 hours of usage per subscriber per week, or approximately 52 movies per year per subscriber. Assuming the cable companies would think the risk and investment worth a return of only 10%, they would need to realize net income after taxes of $93 per subscriber per year. Grossing this up for taxes (38%) and for operating cost (30%), this would require a fee of approximately $3.00 per movie. Since many video stores charge $2.00 for there over night rentals, the question of how large of a premium will customers

\(^{18}\) Reed & Sirbu, op. cit.
pay to receive these movies over cable has to be asked. Nevertheless, fiber backbones at approximately $36 per subscriber, and movement toward ODV capability may provide opportunities to the cable industry to expand the scope of their business while positioning them to provide a full range of interactive information services when the market and the economics are more favorable.

CHAPTER FIVE
THE PERSPECTIVE OF THE BROADCAST INDUSTRY

A. What is at Stake?

To answer the question "what is at stake for the broadcast industry if telcos begin offering cable tv service?", it is helpful to look at what has happened to the broadcast industry since deregulation of the cable tv industry in 1984. From the broadcasters perspective, the most significant impact has been the loss of audience share.

With any further expansion of cable penetration, more households will have more viewing choices. Inevitably some of them will exercise that choice by watching channels other than those of the local broadcasters. This will mean a further erosion of audience share, which will in turn threaten advertising revenues -- and selling advertising is the fundamental business of broadcasting.

In the most extreme scenario, (and not a totally improbable one), as cable penetration approaches 100%, and with at least one cable company carrying local broadcast channels, either because they are paid to ("if carry/must pay") or because they are required to ("must carry"), it is likely that local broadcasters would find the cost of maintaining and operating their transmitters uneconomical when compared to the alternative of "leasing" transport from the local telephone company or cable company. Local broadcasters would then become purely "programers" and their viability would depend on their ability

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to package popular local programming with network programs. However, although the local broadcast channels currently command the greatest audience share, it is questionable as to whether that popularity is the result of value added by the local broadcaster or whether it reflects the popularity of network programming. If their strength is the result of network programming, then the threat exist that the networks could change their formats slightly and offer network affiliation directly to the cable companies. (The pursuit of just such a relationship was recently threatened by Jim Mooney of the NCTA.) This would further erode local broadcaster audience share and could conceivably force many of them out of business. However, it is likely that the FCC or congress would intervene if many broadcasters filed for "chapter 11" since there are public safety and antitrust implications which the broadcasters, through NAB, would exploit in their lobbying efforts.

While this scenario, or some variation of it, will probably begin to occur as cable penetration increases and places increasing financial pressure on broadcasters, RBOC involvement would accelerate the process. Consequently, any moves by NAB to oppose telco entry into cable tv could be viewed as a delaying tactic to allow local broadcasters time to develop business strategies for their new role - that of local programers who lease transport.
B. The Relationship with the Cable Industry

On Tuesday June 20, 1989, John Abel, Executive Vice President - Operations for the National Association of Broadcasters (NAB), made a presentation to the Joint Board of Directors of that organization. The title of his talk was "Telco Entry", it spoke to the threats and opportunities represented by telco entry into cable tv. In this presentation, he basically conceded that telco entry was inevitable and suggested ways in which the broadcast industry could turn such entry to their advantage.

On Tuesday January 23, 1990, James Mooney, President of the National Cable Television Association (NCTA), made a speech to the Washington Metropolitan Cable Club. In this speech he threatened the broadcast industry, which has seen its audience share drop to its lowest level in history, with cable companies seeking direct affiliation with the major networks. Mooney accused the broadcasters of "cable bashing".

These two speeches demonstrate the underlying conflict which has simmered beneath the surface of the uneasy but outwardly cordial relationship which has existed between the two industries for the past few years.

The NCTA and NAB have battled over "must carry" legislation which would require cable operators to carry the signals of local broadcasters in their service areas. Such laws have been struck down in the courts on two separate occasions as violations on the first amendment rights of cable companies.
However, NAB and the NCTA had been formally talking in an attempt to reach an agreement on a legislative proposal for "must carry". When these talks failed, NAB began calling for re-regulation of the cable tv industry and the relationship began to rapidly deteriorate.¹ In January, 1990, the NAB board endorsed the "If carry/must pay" proposal put forth by CBS. The suggestion underlying this proposal is that "Network" tv is still the most popular programing on television and that the cable industry uses it and passes very little of the revenue along to the networks.

Given the continuing animosity over this and other issues such as "channel positioning", it is reasonable to question why the cable industry has been trying so hard to stay on good terms with the broadcasters. The answer could be that about the only thing that the NCTA dislikes more than the idea of re-regulation is the possibility of having their monopoly position spoiled by telco entry into their business. Consequently, Mooney had been trying to convince the broadcast industry that telco entry was a greater threat to their industry than to the existing cable industry. However, based on Able's speech, and NABs public position, Mooney has been unsuccessful.

C. Broadcasters and the Telecommunications Industry

The approach of the broadcast industry to telco entry into

¹ See Broadcasting, January 29, 1990 pg 20 for a more detailed account of the NAB-NCTA relationship.
cable, as represented by NAB, is a pragmatic one. That is, "if telco entry is inevitable, how can we turn it to our advantage?" NAB has studied, and is continuing to study the economic implications of telco entry to the broadcast industry.

NAB sees advantages to a telco owned fiber broadband network to the home. Among the advantages are:

- It would provide another channel over which to reach viewers.
- Since their programming is still the most demanded of video programming available, multiple cable systems would each want to carry their signals. Potentially, the broadcasters could find themselves in a situation where they could sell their programming to the highest bidder.
- Local broadcasters could use their skills and knowledge of local taste to program multiple channels for transmission by the RBOCs - recapturing audience share and increasing revenues.
- A telco owned fiber connection to each home could be an attractive channel over which to deliver High Definition Television.

On the negative side, telco entry would present the following problems:

- If telcos were allowed to buy the existing cable infrastructure, they would trade one "transport monopoly" for another.
o If telcos were allowed to provide programming as well as transport, the danger exist that their "local" programming by the telcos would directly compete with that of the local broadcasters.

The position of the major networks is somewhat different. In the words of the CEO of a major network whose anonymity was promised, "Telco entry seems natural and I'm sure they would do a good job. But I oppose anything that would hurt my bottom line." (That is, more viewer choice means smaller audience share for the networks with a corresponding impact on advertising revenues.)

D. NAB's POLICY STATEMENT

On January 14, 1990, NAB issued a press release through which to iterate its position on telco entry into cable tv. The position addressed four basic areas: (1) MFJ relief for the RBOCs; (2) the purchase of the existing cable infrastructure by telcos; (3) Telco deployment of fiber broadband capability; and (4) Telco involvement in programming.

In summary, NAB does not oppose loosening the Information Services restrictions of the MFJ or the transfer of jurisdiction to the FCC, but would like to participate by offering certain limitations and/or restrictions which were not explained in the press release. NAB opposes, as not in the public interest, the purchase of existing cable companies by the RBOCs. Although it
is not stated explicitly, NAB does not oppose "over-builds"². NAB does not oppose RBOC deployment of a broadband fiber network to the home but recommends that it's use be regulated as a common carrier. Finally, NAB opposes any involvement by the RBOCs in programming.

To conclude, the broadcast industry does have a great deal at risk with telco entry. However, they believe they have at least as much at risk from the status quo - expanding cable monopolies. The broadcasters further believe that video transport is a natural and inevitable extension of the telecommunications network technology and as such may be delayed but not halted. Consequently, rather than expend their energy on trying to stop the inevitable, their approach is to try to influence the nature of telco involvement through constructive participation, while developing strategic plans for optimizing their role in a changing industry.

²"Over-builds" are the building of parallel networks with the same or different technology.
CHAPTER SIX
THE PERSPECTIVE OF THE GOVERNMENT

A. Telecommunications Policy

The role of government in shaping the telecommunications industry in the US is undeniable. By creating incentives and/or constructing barriers, Government at the Federal, State and local levels exerts more influence over industries which are categorized as public utilities than any other factor with the possible exception of economic forces. Even then, the decisions made by these industries with respect to economic alternatives are within the context defined by the restrictions or incentives placed by "The Government."

A dilemma for the telecommunications industry in the US is that it has rapidly evolved from its public utility role into a highly competitive quasi-utility industry and sees an even more expanded role for itself as technology creates the opportunity for new information services. However, government policy toward the industry has been slow to change and most legislators have been too busy with other matters to take time to understand the complex issues associated with telecommunications.

Consequently, the "Government" is an easy target for criticism when it comes to inaction and/or inconsistency in dealing with telecommunications policy for the nation. Congress, in particular, has successfully avoided numerous opportunities in the '70s and '80s to enact meaningful
legislation which would have modernized the ground rules shaping the industry. Instead, it has chosen to allowed the de facto transfer of that policy making role to the judiciary.¹

In the vacuum left by congress, the FCC and the US District Court in Washington have been battling over the shape of and incentives provided for the telecommunications industry. They often assume opposing views on key issues effecting the industry in the US with implications for the global telecommunications industry.² However, congressional interest, which began increasing in the second half of the 80's largely due to problems associated with the rapid growth of the cable TV industry, appears to be approaching the critical mass necessary for action. A few leaders have emerged willing to sponsor legislation and it appears that legislative action may be taken on a number of critical issues including telco entry into cable TV in 1990.

B. Points of View

Among the many government organizations involved, there are

¹ Through the antitrust action brought against the Bell System by the US Department of Justice, the US District Court in Washington has assumed the role of principle policy maker for telecommunications policy in the US. Although Congress has the power to transfer jurisdiction of the agreement which ended that action to the FCC, an organization subordinate to the Congress, it has not done so.

² Prior to 1984 the US had consistently maintained a telecommunications trade surplus. Since 1984 the US has developed a substantial telecommunications trade deficit.
numerous points of view. Some seem to reflect the perspective of the cable industry while others take the position of the telecommunications industry; Some reflect the interest of urban constituents while others the interest of rural America; Some reflect the view of the national consumer while others focus on the viewpoint of business. However, although the industries involved understandably focus on markets, competition and the relative strengths and weaknesses of competitors, the proper perspective for "Government" should transcend the needs and goals of individual industries. It can be argued that, given the changes in global economic relationships, the proper perspective for the Federal Government should be broader than the interest of any single industry, and should be broader even than the short term interest of the consumer. Government's perspective must be externally focused - a global macroeconomic perspective, if the US is to remain a world competitor. Figure 6-1 attempts to graphically frame the current and needed perspectives of federal and state governments.

Although the perspectives depicted in Figure 6-1 could apply to Government's approach to the issues involving any industry, "infrastructure industries" such as, and perhaps especially, telecommunications require a global perspective by those setting national policies. As the US economy shifts even further toward services, the most fundamental economic issue of national policy is, "Will our national policies promote economic strength for the US in a global economy?" A corollary question
which is at the heart of national telecommunications policy, although perhaps not recognized as such, is:

Will the US Government encourage or discourage the development of the distribution channels for a major portion of our service industries in a global market?

-- And if the Telecommunications infrastructure in the US falls behind other industrialized countries with service oriented economies, how will the US compete in exporting its knowledge based services?

-- And what will be the implications for the US balance of trade in the future?

Unfortunately, many in government do not recognize that these are valid questions. For those that do, there are no concrete answers. If there were, there would be no debate. The answers are largely subjective and intuitive. In that context, the question of telco entry into cable TV, while seemingly a narrowly defined battle involving microeconomic issues of two or three industries, arguably involves issues which are much more far reaching and which potentially have significant consequences for the future competitiveness of US businesses and for the US as a nation.
FIG 6-1
In this chapter I will attempt to objectively present the predominant points of view held by the various governmental organizations involved in the issues surrounding the cable TV industry, particularly with regard to telco entry. That is, the positions being taken by those in leadership positions at the FCC, the National Telecommunications Information Administration, the Federal Courts, the Congress and the National Association of Regulated Utility Commissioners.

C. The Federal Communications Commission

The FCC, of all the governmental bodies involved in the issues concerning the cable industry, including telco entry, is well positioned to be objective, to weigh technical and economic issues and to act and/or make recommendations that serve the "national interest." The FCC, while not "a-political," is arguably less subject to pressures from special interest than Congress or the administration. Furthermore the FCC has greater expertise available through its staff to analyze the issues from numerous perspectives.

There have been several FCC dockets which deal with the issues involved with telco entry into cable TV, but one of the

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3 Although the FCC was created by Congress in the Communications Act of 1934, its commissioners are appointed by the President and none have ever been forcibly removed from office.

4 Recent dockets directly addressing the issues are: Dckt. 87-266 (Telco/Cable TV cross ownership) - Notice of Inquiry, Further Notice of Inquiry and Notice of Proposed Rulemaking; Dckt 89-600 (Competition, Rate Deregulation and the Commission's Policies Relating to the Provision of Cable Television Service);
more insightful documents to come from the FCC was not a "docket" at all. It was a working paper published in November, 1988 by the acting director of the FCC's Office of Plans and Policy, Robert M. Pepper, entitled "Through The Looking Glass: Integrated Broadband Networks, Regulatory Policies, and Institutional Change," it included a disclaimer that it reflected only the views of the author and not necessarily the views of the FCC. However, given the author's position at the commission, his views are certainly influential. Rather than reiterate the arguments and facts set forth in this paper, suffice it to say that the paper expressed views that generally favor much more freedom for the RBOCs in the provision of information services including cable TV and fairly addresses the concerns of other effected industries including the cable and broadcast industries. However, much has changed since November 1988.

Among those interviewed in connection with the research for this thesis was the author of "Through the Looking Glass." Based on that interview, Bob Pepper's conclusions and recommendations have not substantially changed. However, the most striking viewpoint to come from that interview, which was not specifically addressed in the paper, was Pepper's strong feelings that "facilities based competition" should be a goal of national policy as the cable TV and telecommunications

Dckt. 90 (Effective Competition Standard for Cable TV).
industries merge. This is significant since it conflicts with one possible strategy of the telecommunications industry: "Buy the existing cable infrastructure and lease transport service to the cable operators" (see Chapter 3). This strategy is attractive to the telecommunications industry for several reasons, not the least of which is it may provide the basis for a less confrontive relationship with the cable industry and because of a deeply felt belief in economies of scale of "one network pipe" into the home held by the leaders of the RBOCs. Pepper is not convinced that the economies of scale are that significant and absent such, prefers competition in all aspects of information service provisioning. This belief in the benefits of competition is a consistent theme in FCC statements and recently was reiterated in the FCC Notice of Inquiry on Cable Television⁵ which stated: "We continue to believe that in the long term, competitive market forces will best promote the interest of the viewers or consumers." However, FCC Commissioner Patricia Diaz Dennis has used the analogy of the RBOCs as a "mall owner" with information content providers as "stores in the mall." The analogy goes on that the mall owner would have an interest in each store succeeding since the mall takes a percentage of the revenue from each. The Mall owner might even own a store in the mall. The use of such an analogy leads one to believe that the commissioner may be in close

⁵ FCC Docket 89 - 600.
agreement with the telecommunications industry's perspective regarding the role of the public network in providing information services.

The FCC is clearly concerned about the public outcry over the cable TV price increases and service problems. This concern is reflected in the nature of the questions in the Notice of Inquiry (Docket 89-600) released December, 1989. Although this inquiry is a necessary part of the commission's requirement to respond to congress regarding the impact of the 1984 cable act, the questions clearly indicate the areas in which the commission has concerns. For example, after stating its belief in competition as the best means of serving the public interest, the inquiry asks for input regarding the market power of the cable industry, referencing the high market prices to replacement cost ratios for existing cable companies as a possible indication of monopoly profits. The inquiry goes on to raise the idea of "video dial tone" provided by the telcos as a possible way of introducing competition into the cable industry. And this against a backdrop of the FCC's statement in its 1988 Notice of Proposed Rulemaking in which it argued that barring telco crossownership of cable TV operations was no longer in the public interest. The combination of past statements and present questions tends to paint a picture of the FCC's intentions.

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6 FCC Docket 87-266 Notice of Proposed Rulemaking.
My estimation of the FCC's announced and unannounced positions can be summarized as follows. The Commission:

- Favors competition over regulation as an underlying principal.
- Believes that the cable act, while providing for growth in the cable industry has given rise to a group of unregulated monopolies.
- Believes those monopolies have not served the public as well as they should (re service and pricing) and believes corrective legislation is necessary.
- Does not want to "trade one monopoly for another" by allowing the telephone companies to provide the only information pipe into the home.
- Is ambivalent to the implications of the decisions to be made regarding these issues on the development of the telecommunications infrastructure in the US.
- Believes the public will best be served by allowing the telephone companies into the cable TV business but with restrictions on content and sole ownership of facilities.

D. The National Telecommunications Information Administration

The NTIA is an agency within the US Department of Commerce. As such it tends to approach issues from the viewpoint of business, advocating policies which will produce economic growth and business stimulation. However, the NTIA has shown interest
in the macroeconomic implications of national telecommunications policy.

The NTIA's position on telco entry into cable TV is revealed in numerous reports and studies prepared by the agency. In a special publication entitled "Telecom 2000: Charting a Course for a New Century" released in October 1988, the NTIA concluded that the information services restrictions on the RBOCs by the MFJ had retarded the development and deployment of information services in the US. In two other documents the Administration has expounded further on its concerns and recommendations.


At the time the first report was published, Alfred C. Sikes, the current FCC chairman, was head of the NTIA. It was in this report that the concept of Video Dial tone was first put forward. In general, the NTIA's position as in this report advocates increased incentives for local exchange carriers

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7 NTIA Report 88-233.

8 Docket No 91296-9296.
(LECs) to provide video common carriage\(^9\) but recommends against changing the rules "prohibiting local telephone companies from providing video programming directly to subscribers within their service areas."\(^{10}\) The report cautions about the dangers of increased vertical integration (see Appendix 2) in the cable industry and suggest that those laws and regulations currently in place to protect the cable industry should be relaxed since the cable industry is no longer an "infant."

The 1989 Notice of Inquiry, while asking questions about the status of the US telecommunications infrastructure and the future role of telecommunications in making the country stronger competitively, ultimately gets back to the question of ways to provide the existing US telecommunications industry with incentives to modernize. The NTIA is fully aware of the arguments that access to cable TV as a first step toward providing information services is the strongest incentive possible. Consequently, the motivation for asking such a question might be to establish a public record to support the recommendations which they are likely to make - allow the RBOCs into the cable TV business; allow out-of-region cross ownership; and lift the information services constraints of the MFJ.

\(^9\) To accomplish this, government restriction prohibiting the LECs from providing transport service to anyone other than a franchised cable company should be lifted and the LECs should be further permitted to provide "ancillary" services such as billing and system maintenance.

\(^{10}\) "NTIA Report 88-233", pg 36.

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E. The US District Court for the District of Columbia

Of all the government organizations having some authority to set rules and influence the activities of the Regional Bell Operating Companies, the US District Court in Washington effectively is the most powerful, not because of its constitutional or statutory power, but rather because of its decisiveness - all the authority rest in the hands of one man, Judge Harold H. Greene. Unfortunately, for the telecommunications industry and for the country, Judge Greene's perspective is incredibly narrow, focusing only on microeconomic issues involving the behavior of a group of companies in one domestic industry. This narrowness of perspective is further compounded by the judges view that the RBOCs are villains and cannot be trusted. The tone of the wording in his decisions reveals a deep prejudice against the RBOCs and a belief that he understands their intentions and that they are dishonorable. For example, in his June, 1989 order in response to a waiver request by Bell South, Bell Atlantic and Southwestern Bell, for permission to offer electronic publishing and electronic directory services, Judge Greene said:

The Regional Companies, in their filings, write eloquently and often about level playing fields. But here again, a level playing field is furthest from being their objective. The Regional Companies seek to enter competitive markets, with the full expectation that their participation therein will be subsidized.\textsuperscript{11}

\textsuperscript{11} USA v Western Electric Co. (1989).
In Greene's view, the RBOCs would cross subsidize these services and take unfair advantage even if the RBOCs were allowed to offer these services only outside of their serving areas. Clearly, if the judge, who should bring objectivity and impartially to the questions brought before him, feels so strongly about one of the parties that he cannot keep his emotions out of the wording of his rulings, unbiased thoughtful decisions seem an impossibility.

Perhaps this deep dislike of the RBOCs explains why Judge Greene alone, refuses to consider anything but the strictest interpretation of the decree, even when the Department of Justice, who brought the original suit, the NTIA, the RBOCs and others urge him to do otherwise.

The tragedy for the country is that one biased individual is setting telecommunications policy for the country from a distorted and narrow perspective. Consequently, broader economic issues that are vital to the future competitiveness of the US and which others wish to be considered, are being ignored. Only Congress has the power to correct this by transferring jurisdiction over the MFJ to the FCC. Until they do, it is unlikely that the RBOCs will be allowed to offer information services, which are explicitly forbidden, by taking the first step into cable TV.
F. Congress

In the eyes of congress, "CATV companies are at an all-time low as a corporate citizen," according to Roy Neel, an aide to Senator Al Gore, D-Tennessee,\textsuperscript{12} a senate leader on cable TV legislation. Congress is literally receiving thousands of complaints from constituents about the quality and price of cable TV service across the US.

Congress hears, too, complaints about cable service that arise from such activities as the FCC field hearing on cable in Los Angeles held on February 12, 1990. At that hearing representatives from the TV production industry charged that the cable industry was exercising monopoly power through huge MSOs (Multiple System Operators) which were now dictating to the production industry what type of programing to develop. One of the most interesting public statements made at this hearing was made by a congressman, Carlos Moorehead (R-California), who said, "I think home-to-home digital fiber telecommunications infrastructure should be a national goal."

As a result of these complaints, activity by the FCC and NTIA and increasing criticism of Judge Harold Greene's control over national telecommunications policy, it appears congress may act soon. On February 9, for example, Chairman Ed Markey (D-Massachusetts) of the House Telecommunications and Finance Subcommittee released a draft of legislation designed to shift

\textsuperscript{12}Telephony, January 15, 1990.
jurisdiction over line of business restrictions from Greene to
the FCC. This is only the latest of approximately two dozen
bills either introduced or circulating for discussion. Even if
no action is taken by congress in this session, the many
sponsors and co-sponsors of these bills are evidence of the
growing attention which congress is giving to cable TV and
telecommunications issues. According to Larry Clinton, an aide
to Congressman Rick Boucher (D-Virginia) who has sponsored a
bill which would allow telco entry into cable TV, legislation in
this session "is likely."\textsuperscript{13}

Congress also is becoming interested in the national
infrastructure issues. Sensitive to the economic ground lost to
other countries over the past twenty years, Congress does not
want to be responsible, through inaction, for an increasing
trade deficit and the exporting of US jobs. Increasingly,
editorials in newspapers and respected periodicals such as
Business Week are raising questions about the impact on the US
economy of falling behind other nations in the development of a
modern telecommunications infrastructure. One recent editorial
called for freeing the "Baby Bells" as the way to keep the US,
if not ahead, at least even in the infrastructure race while
dismissing concerns about cross-subsidization.\textsuperscript{14} Such editorials
certainly have an impact on congress as they do the rest of the

\textsuperscript{13} Telephone interview by author, February 23, 1990.

\textsuperscript{14} Business Week, March 12, 1990, pg. 140.
population. In fact, Congressman Boucher and Senator Gore have been personally discussing the issue of telecommunications infrastructure and its implications for the economy.\textsuperscript{15}

On February 22, 1990, Congressman Boucher released a thirty page white paper\textsuperscript{16} advocating telco entry into cable TV as a better alternative for the country than re-regulation. His proposal advocated full participation by the telcos, including the opportunity to provide programming.

To summarize Congress' position:

\begin{itemize}
\item Congress views the Cable Companies as having abused their monopoly position.
\item Congress wants to correct the problem either through competition or re-regulation.
\item Congress is becoming increasingly sensitive to questions about the telecommunications infrastructure in the US.
\item Congress is beginning to see incentives for the RBOCs, such as entry into the cable TV business, as the most workable way to address the infrastructure questions.
\item Congress wants to re-assert its control over telecommunications policy and is leaning toward moving MFJ jurisdiction to the FCC.
\end{itemize}

\textsuperscript{15}Per February 23, 1990 telephone interview by the author with Larry Clinton, aide to Congressman Boucher.

\textsuperscript{16}"Cable Competition VS. Cable Regulation, White Paper on Telecommunications Policy" by Congressman Rick Boucher, February 22, 1990.
G. National Association of Regulated Utility Commissioners

Since Congress has difficulty agreeing on national telecommunications policy, it is not surprising that the more than two hundred public service commissioners scattered across the country can not agree on their recommendations. This has never been more apparent than in the diversity of the comments and reply comments filed on FCC Docket 87-266 concerning telco/cable TV cross ownership. For example, NARUC, the District of Columbia and five states\textsuperscript{17} filed comments indicating that non-structural (accounting) safeguards were untested and might not be adequate to prevent telcos from cross subsidizing cable TV activities from regulated service revenues. Eleven states,\textsuperscript{18} including some mentioned above, recommended removal of cross-ownership restrictions in order to allow RBOCs to buy existing cable companies. Naruc, Arkansas, Iowa and Connecticut filed comments that the states and not the FCC should decide whether to allow the telco/cable TV cross ownership on a market basis.

More significant than the diversity of priorities and points of view of the various PUCs across the country is a clear picture of the narrowness of their perspectives. Referring to figure 6-1 again, most state PUCs are focusing on the issues with a statewide and local microeconomic perspective. This is

\textsuperscript{17}Arizona, Illinois, Missouri, New Jersey and Alabama.

\textsuperscript{18}Arkansas, Georgia, Illinois, Iowa, Michigan, Missouri, New Jersey, Ohio, Pennsylvania, West Virginia and Connecticut.
understandable given their history and their mission to regulate state "utility" companies in such a way as to insure fair rates and good service for customers and a reasonable financial return to the companies. However, PUCs and their states would benefit if they would broadened that perspective to a national level and recognize that a modern telecommunications infrastructure can be a catalyst to economic development within the state while providing a competitive edge over states with less developed information transport capabilities.

In a report published in 1988 by the Center for Growth Studies of the Houston Area Research Center, entitled "New State Roles: Environment, Resources and the Economy," the case for a broader perspective by state governments was made eloquently in the following statement:

Telecommunications is no longer simply plain old telephone service. There are a myriad of new information services that will profoundly affect our social and economic lives, including international competitiveness. Therefore, telecommunications should become an important part of state economic development as our economy increasingly relies on the ability to manage, move and use information. States need to determine what level of universally available and affordable services should be delivered to meet the economic and social needs of their citizens. The widespread availability of advanced information services critically depends on a new telecommunications infrastructure, including public and private networks. What highways, airways and railways are to transportation services, telecommunications networks are to information services. State policy choices will greatly influence the speed at which new telecommunications technologies will enter the marketplace. This in turn affects the degree to which telecommunications will facilitate economic development. Our competitors in Europe and Asia have already begun to develop new telecommunications infrastructures. Time, therefore, is of the essence.
State telecommunications policies are generally reactive and narrow in scope and are ill-equipped to anticipate the possible economic benefits and pitfalls of new technologies. Developing new telecommunications policies will require new perspectives and mechanisms within state government.

NARUC, although an organization of state PUCs, has the opportunity to provide national leadership by taking a more global perspective. With its staffs and a historical perspective of telecommunications issues, it is well positioned to provide recommendations to congress aimed at helping shape the country's infrastructure in such a way as to make the US a more effective international competitor. Unfortunately, the current Communications Committee Chairman of NARUC said during a panel discussion at the NARUC annual meeting in Boston in November, 1989, that the telecommunications infrastructure in the US is adequate as it is and that "we should temper the enthusiasm of marketers and reassess the type of Information Age services that should be brought to the marketplace."

The only conclusion to be drawn from NARUC's public statements and continuing intramural turf battles with the FCC over jurisdiction, is that the organization's perspective remains parochial and too narrow to serve the larger national interest.
H. Summary

On the subject of national telecommunications policy, the NTIA appears to have the broadest perspectives and is investigating issues which transcend the microeconomics of individual industries. The FCC has made progress in that direction but is skeptical that the national telecommunications infrastructure dangers are as urgent as some would argue. Congress, because of the political threat of an angry constituency, is increasingly paying attention to the telecommunications and cable industries, but there is little evidence that many in congress understand the significance of the issues to be addressed. While there are undoubtedly some very bright and capable state regulators who understand the implications of a modern telecommunications infrastructure for their states and the country, NARUC is ineffective and misguided, demonstrating the potential of bureaucracies to be far less than the sum of their parts.

Finally, the judge of the US District Court in Washington, Harold Greene, seems to have closed his mind in 1982 when the agreement to break up the Bell System was presented to him, and refuses to consider anything which has occurred since. Whether or not the telecommunications marketplace has significantly changed since 1982, most people's understanding of the issues have evolved and the world has dramatically changed. The Department of Justice sees that, the FCC sees that, The NTIA sees that, the RBOCs see that, Congress is beginning to see
that, but Judge Greene does not.
CHAPTER SEVEN
CONCLUSIONS AND RECOMMENDATIONS

A. The Economic Environment

As the growth of wealth in the US since the end of the second world war has been the result of productivity improvements in manufacturing and agriculture, future growth will be dependent upon productivity improvements in the service industries which now dominate the US economy.¹ For "non-physical" services such as those provided in the areas of finance, consulting and management,² modern telecommunications capabilities are vital to efficiency. They provide the major distribution channels for that portion of the economy, a reality which will become increasingly apparent in this decade.

Furthermore, as distribution channels, the capabilities of telecommunications networks will have significant implications for the US's ability to export its services. If the US telecommunications infrastructure is efficient and meets international interface standards, it will be easier and less expensive for firms and individuals in Europe and Asia to access services in this country such as stock quotations, banking, databases, video, etc. This will be important since the shift of the US economy toward services will further aggravate efforts

¹According to data released by the US Department of Labor, Bureau of Labor Statistics, in mid 1989, over 76% of workers in the US were employed in the services sector of the economy.

²Examples of "physical" service providers would be barbers, waiters, mechanics, etc.
to overcome the balance of trade deficit.³

B. Government Policy

B.1 Federal

As discussed in chapter six, all levels of government in the US are too narrowly focused. Within the federal government, positions are being taken which support the interest and welfare of one industry or another, and/or reflect the emotionalism of consumers who cast votes but are seldom sophisticated enough to understand the complexities of the US economy, much less the changes in the US's position in the global economy. At the federal level, the welfare of the nation should be the first priority.

In the past, when the US was clearly the dominant economic power in the world, it was immune from the dangers of focusing internally. The rest of the world simply had to go along with whatever we did regardless of our motivations. Unfortunately, too many of our present politicians and bureaucrats have been trained in that school and consequently have not yet realized that the economic role of the US has changed and that operating as though it has not can be disastrous for our standard of living. Until these leaders learn this and begin to include the impact on international competitiveness of the decisions which they are making, the US will continue down the path of

³Services are more difficult to export than manufactured goods.
diminishing economic power, increasing budget deficits, and an increase in the balance of trade deficit.

B.2 *State*

If there is difficulty at the federal level in broadening perspective beyond parochial interest, it is even more difficult at the state level. State governments often seem to find it difficult even to think regionally and therefore often past laws which do not consistently support economic development.

The economic competitiveness of regions is influenced by many factors, none more significant than taxes and infrastructure. However, in many cases low tax rates and modern infrastructures are difficult to achieve simultaneously. In the case of telecommunications, that opportunity currently exist and taking advantage of it may be the most significant contribution state politicians can make to future generations. What the highway system was to a manufacturing oriented economy, the telecommunications infrastructure will be to a services oriented economy. If state legislators understood this, they would rush to create incentives for private industry to build the most modern telecommunications infrastructure possible. It could be done without raising taxes, for with the proper incentives, it would be funded by the private sector. The benefits might not be fully realized until after the turn of the century, but they will be more lasting than the impacts of many short term
economic programs which seldom work, divert attention and waste time and money.

C. The Telecommunications Industry

The telecommunications industry understands the potential of its technology far better than it understands the economics of deploying that technology. If Integrated Broadband Services are to become a reality in this decade rather than just a slogan, the industry must do a better job of evaluating the economics of deploying a network architecture capable of supporting such services. Such an analysis should take into account learning curve projections in cost reductions and revenues from new services. Then, subject to the lifting of specified legal and regulatory constraints, it must commit to deployment schedules. It is likely that such plans will disappoint many optimistic technocrats who believe that fiber to the home will be ubiquitous in this century. However, it would add much needed credibility to the industry's position and end the wild estimates of hundreds of billions of dollars of investment nationally which have no relevance to individual firms or their markets.

Because the industry does understand the potential of its technology, it would be more effective in its efforts to lobby congress if it would turn its attention to quantifying the impact of modern telecommunications on national competitiveness in a service oriented economy and then to share this with
congressional leaders. Such an analysis would be an effective tool for educating state regulators and legislators as well.

D. The Cable Television Industry

For the cable TV industry, even an uncharacteristic display of self restraint may not be enough to prevent major intervention by the federal government. The US Senate and House of Representatives appear to be in a race to see which can act first to respond to complaints of constituents and "to deal with the abuses of the cable industry."

What the cable industry failed to realize was that its success would subject it to political pressures which would require a good public relations plan and a few allies. Currently, the industry has many adversaries - including, politicians, the telecommunications industry, the broadcast industry and the national networks - and very few friends.

The cable industry in the euphoria of its rapid growth, failed to compromise with the other major players in order to build coalitions. With few friends and a weak public image, the industry's adversaries have found it easy to exploit public relations mistakes and weaknesses.

If the cable industry fails to learn from its past mistakes, it will possibly face not only re-regulation and

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"The risk exist that the action taken may be a "quick fix" to satisfy voters in an election year rather than the reflection of a thoughtful national policy intended to better position the US in the global marketplace.
competition from the telcos and/or programers using the telcos transport capabilities\(^5\), but antitrust action as well, since there is growing concern over the consolidation and vertical integration of the industry.\(^6\) Failure to reach a compromise with the broadcast industry over issues such as "must carry" and channel positioning for local broadcasters combined with threats to seek direct network affiliation may very well cost the industry its "compulsory license" rights.\(^7\)

E. **The Broadcast Industry**

Perhaps recognizing that technological progress will inevitably displace the transmitter, the broadcast industry, through the National Association of Broadcasters, has taken a public position on cable issues, including telco entry, which, if effective, will buy it some time. Unlike the cable industry, the broadcasters have been able to take a stand on issues without being overly abrasive. Consequently, they have many friends.

The broadcast industry will continue to be an effective intervener in cable issues. At the same time they will work

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\(^5\)On March 9 the Senate Commerce Committee released a draft proposal which would allow third party programers exemption from local franchise fees if they used the telcos transport capacity.

\(^6\)Abuse of monopoly power is a frequent theme in testimony before the FCC.

\(^7\)the right to retransmit any broadcast signal in its operating area.
toward business strategies which will take advantage of their strengths and look for alliances which will enhance them. Consequently, it is likely that within this decade alliances will emerge between the broadcast industry and the telecommunications industry since their relative strengths and weaknesses are exactly complimentary.

F. The Winning Perspective

As one who works in the telecommunications industry, I must admit that it is easier for me to appreciate the perspective of my own industry. I feel certain that those who work in either the cable tv or broadcast industries would say the same thing about their respective views of the issues. Consequently, they might disagree with some of the conclusions I have reached.

For all who work in the private sector, it is tempting to allege that it is government's responsibility to rise above the positions of any one industry and to act "in the national interest." However, given the changing nature of international competition, global economics, and international trade, business leaders as well as those in government must each take into account the implications of our decisions on our nation's ability to compete internationally - especially those industries involving important national infrastructures.

Macroeconomics have always been important to successful business people. Today the only macroeconomics that count are global.
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APPENDIX 1

PROVISIONING OF CABLE TELEVISION SERVICE
BY THE TELECOMMUNICATIONS INDUSTRY

Government Imposed Restrictions

Five different levels of government impact upon the provisioning of cable TV. They are:

1. Congress (The 1984 Cable Act)
2. Federal District Court in Washington DC (MFJ Court)
3. Federal Communications Commission
4. State Public Utility Commissions
5. Local Franchising Authorities

The following is a brief explanation of current restrictions on a service and/or functional basis:

Operation and Ownership of Cable TV Services

A distinction must be made between "In-Region" and "out of Region" ownership/operation. In-region ownership by an RBOC is restricted by both FCC rules and the Cable Act. Out of region is permitted; however, a waiver of the MFJ content restriction is required to provide programing¹. In addition, the Department of Justice considers ownership of the satellite receiving equipment necessary to receive the signals for retransmission on the cable system a violation of the interstate restriction imposed by the MFJ. Finally, to the extent that state PUCs require certification of cable operators, that requirement would have to be met as well.

If the Telco were to offer the service as an unregulated part of their telephone business, then Part 64 accounting requirements would have to be met. If the Telco RBOC were to provide the service through a separate subsidiary as an unregulated business, then the affiliated interest requirements of the state would have to be met.

Dedicated Backbone Transport Network

If these are offered as regulated service to cable companies, then a "214" application would be required by the FCC. If offered as a unregulated service, then Part 64 accounting would be required.

¹ A waiver for out of region programing has been requested by Pacific Telesis in connection with its acquisition of a 68% interest in Group W Cable Associates of Chicago, announced in April 1989.
Integrated Network Transport

The central issue here is whether the Telco would provide "Video Dial Tone", use the network to transport its own video signals or some combination of both.

If a company were to provide video dial tone and lease some fixed bandwidth to a cable programmer on an unregulated basis, the telco would have to comply with "214" rules and Part 64 accounting requirements.

If the telco were to use the network to transport its own video programming, in addition to the above requirements, if would also have to seek an MFJ for content and interexchange restrictions and the cross ownership prohibition of the 1984 Cable Act would have to be repealed.

On the state level, the telco would have to gain a local cable TV franchise. Also, the State PUC would certainly interject itself regarding the cost allocation methodology and controls to be put into place.

Programming and Packaging

Standing as a huge obstacle to this endeavor is the MFJ's content restriction. In general, the MFJ restriction on content seems more binding on electronic medium than on printing. Each of the RBOCs has received a waiver for printing.

Currently, Pacific Telesis has a waiver request pending before Judge Greene in connection with its Chicago purchase of a 68% interest in "Group W Cable Associates". This is an out of region acquisition but might give some insight into how Greene will interpret the content restriction as it applies to cable programming.

Neither FCC or state and local rules address telco-provided program production as a stand alone activity. That means that a telco could produce movies subject to certain MFJ restrictions on distribution. A telco could, on a stand alone basis provide program distribution and syndication; program financing; and the operation of movie theaters.

Providing Services to a Cable TV Affiliate

Both the FCC's rules and the Cable Act prohibit the provision of channels of communications or pole line conduit space, or other rental arrangements, to affiliates when such facilities are to be used for, or in connection with, the provisions of video programming to the viewing public in the telephone service area of the telephone company.

Distinguishing the FCC's rules from the Cable Act is the latter's looser definition of an affiliate, which permits an
interest that does not amount to common control.

A telco could presumably offer communications services to a cable TV affiliate on a tariffed basis.

Ancillary Services: Joint Ventures/Financing

It appears that the FCC's cross-ownership rules, as well as the cable act restrictions, prohibit joint ventures and other kinds of financing arrangements between telcos and cable companies when the joint venture involves in-region business relationships. Otherwise, out-of-region joint ventures with cable companies would be permissible.

Regarding the MFJ impact on joint ventures, in general joint ventures are prohibited and would require a waiver.
APPENDIX 2

MAJOR VERTICALLY INTEGRATED MULTIPLE SYSTEM OPERATORS

Tele-Communications Inc. (TCI)

- Interest in systems that reach more than 11 million of the 50 PLUS million national subscribers. (About 22% of the total market)

- Equity interest in at least 13 channels or programming services

- Market share doubled between 1986 and 1987, and the gap between TCI and the second largest MSO, ATC, increased from 2.2 percentage points to more than 11.

Time Inc. (American Television and Communications Corporation - ATC)

- More than 4 million subscribers

- Delivers programing nationally through its ownership of the leading premium channels, HBO and Cinemax, along with equity interest in 10 other networks and programing services.

- Between 1985 and 1987 the market share gap between ATC and the next largest MSO more than quadrupled.

Warner Communications

- 1.5 million subscribers

- Equity interest in eight networks or programing services.

Cable Vision

- 1.4 million subscribers

- equity interest in 12 networks or programing services

Viacom

- 1 million subscribers

- Equity interest in 13 networks or programing services