by cable program networks, cable operators also must incur costs in order to add the capability to receive the secondary audio programming ("SAP") channel.

The Notice also seeks information on the number of cable operators and other MVPDs currently capable of transmitting and decoding a SAP signal.[113] While it is our understanding that many cable operators already carry SAP signals transmitted by programmers, the SAP is being used to provide other services, including Spanish language audio and other services of interest to the community.

While cable networks will continue their voluntary efforts to provide enhanced services for customers with visual disabilities, it is premature for the Commission to establish schedules for providing DVS. Given the current significant costs of DVS, technical difficulties with providing the service in view of conflicting uses of the SAP, and significant copyright questions involved[114], we urge the Commission to take a cautious approach.[115]

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113 Notice at ¶23.

114 See Closed Captioning Report at 50 (noting copyright issues involving creation of a derivative work).

115 This is particularly true since Congress did not authorize the Commission to adopt any rules regarding video description. The provision granting the FCC authority to impose regulations, if necessary, while included in the House bill, was deleted in Conference. Joint Explanatory Statement of the Committee of Conference at 184.

CONCLUSION

The MVPD marketplace is competitive. While cable's growth rate has stabilized in the 2%-3% range, its competitors are experiencing dramatic growth rates, coupled with competitive advantages of higher channel capacity, more varied programming offerings, and digital picture quality. As the FCC ponders this fourth report on the state of video competition, it must conclude that the market is substantially competitive and different in kind and degree from the market of four or even two years ago.

Respectfully submitted,

Daniel L. Brenner

Daniel L. Brenner
Neal M. Goldberg
David L. Nicoll
Loretta P. Polk
1724 Massachusetts Avenue, N.W.
Washington, D.C. 20036
202-775-3664

Counsel for the National Cable Television Association, Inc.

Gregory L. Klein
Director of Economic & Policy Analysis

Meriem Faidi
Legal Intern

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APPENDIX A

Table A-1

Vertical Connection Between Major Cable Programming Networks and Cable System Operators

Programming Network (Top 20)	Subscribers (millions)	MSOs with Ownership/Equity Interest in Network	Date Began
ESPN	71.1	None	9/79
CNN	71.0	Time Warner (100%) (Liberty Media owns 9% non-voting interest in the Turner Networks).	6/80
TNT	70.6	Time Warner (100%) (Liberty Media owns 9% non-voting interest in the Turner Networks).	4/88
TBS	69.2	Time Warner (100%) (Liberty Media owns 9% non-voting interest in the Turner Networks).	12/76
C-SPAN	69.7	Cable Affiliates provide 95% of funding, but have no ownership or program control interests.	3/79
USA Network	69.7	None	4/80
The Discovery Channel	69.5	TCI (49%), Cox (24%), Newhouse (24%)	6/85
TNN: The Nashville Network	68.9	None	3/83
Lifetime Television	67.0	None	2/84
The Family Channel	66.9	TCI /Liberty Media (20.3%)	4/77
A & E Television Network	66.9	None	2/84
MTV	66.7	None	8/81
Nickelodeon/Nick at Nite	66.0	None	4/79, 7/85
The Weather Channel	66.0	None	5/82
Headline News	64.2	Time Warner (100%) (Liberty Media owns 9% non-voting interest in the Turner Networks).	1/82
American Movie Classics	61.5	Cablevision Systems (75%), NBC (25%)	10/84
CNBC	60.0	None	4/89
QVC	58.2	TCI (43%), Comcast (57%)	11/86
VH-1	56.3	None	1/85
The Learning Channel	55.0	TCI (49%), Cox (24%), (24%)	7/85

Source: Ranking of Cable Networks as reported in *Cable Television Development*, Spring 1997; Ownership Interest: primarily as reported in Paul Kagan Inc., *Cable TV Programming*, May 31, 1997, pp 2-5.

Table A-2

Vertical Integration: Top Fifteen Major Cable Programming Networks (by Primetime Ratings)

Rank	Service	Date Began	MSOs with Ownership/Equity
1	TBS	12/76	Time Warner (100%) (Liberty Media owns 9% non-voting interest in the Turner Networks)
2	TNT	4/88	Time Warner (100%) (Liberty Media owns 9% non-voting interest in the Turner Networks)
3	USA Network	4/80	None
4	Lifetime Television	2/84	None
5	The Discovery Channel	6/85	TCI (49%), Cox (24.5%), Newhouse (24.5%)
6	A & E Television Network	2/84	None
7	ESPN	9/79	None
8	The Cartoon Network	10/92	Time Warner (100%) (Liberty Media owns 9% non-voting interest in the Turner Networks)
9	The Family Channel	4/77	TCI/Liberty Media (20.3%)
10	TNN: The Nashville Network	3/83	None
11	CNN	6/80	Time Warner (100%) (Liberty Media owns 9% non-voting interest in the Turner Networks)
12	The Learning Channel	11/80	TCI (49%), Cox (24.5%) Newhouse (24.5%)
13	Sci-Fi Channel	9/92	None
14	fX	6/94	TCI (50%), News Corp. (50%)
15	ESPN2	10/93	None

Source: First Quarter 1996 Ranking for Primetime as reported in Paul Kagan Associates, *Cable TV Programming*, June 26, 1997 at 10. Ownership as reported in Paul Kagan Associates, *Cable TV Programming*, May 31, 1997, pp. 2-5.

Table A-3
National Programming Services with Ownership Interests Held By Cable Operators

Network	*Began*
Action Pay Per View*	9/90
AMC (American Movie Classics)	10/84
Animal Planet	10/96
BET: Black Entertainment Television	1/80
BET on Jazz	1/96
THE BOX (formerly The Jukebox Network)	12/85
Bravo	12/80
The Cartoon Network	10/92
Cable News Network (CNN)	6/80
Cinemax	8/80
CNN/SI	12/96
CNNfn	12/95
CNNI (CNN International)	1/95 in US
Comedy Central	4/91
Courtroom Television Network (Court TV)	7/91
C-SPAN	3/79
C-SPAN 2	6/86
The Discovery Channel	6/85
Discovery Civilation	10/96
Discovery Kids	10/96
Discovery Science	10/96
Discovery Travel and Living	10/96
E! Entertainment Television (formerly Movietime)	6/90
ENCORE	6/91
ENCORE Thematic Multiplex SM	1994
The Family Channel	4/77
FiT TV	12/93
Fox Sports Americas	12/93
fX	6/94
GEMS Television	4/93
The Golf Channel	1/95
Great American Country	12/95
HBO (Home Box Office)	11/72
Headline News	1/82
Home Shopping Network	7/85
Home Shopping Spree (Spree!)	9/86
The Idea Channel	1/92
The Independent Film Channel	9/94
The International Channel	7/90
Jones Computer Network	9/94
Knowledge TV (fomerly MEU)	11/87
The Learning Channel	11/80

Table A-3 continued

Network	Began
MuchMusic	7/94
NewSport	2/94
Odyssey (formerly Faith and Values)	10/93
Outdoor Life	7/95
Prime Network	1/93
Product Information Network (PIN)	4/94
QVC	11/86
Q2	9/94
Request Television	11/85
Request 2	7/88
Request 3-5	9/93
Romance Classics	1997
Speedvision	12/95
TBS	12/76
TNT (Turner Network Television)	10/88
Television Food Network (TVFN)	11/93
Turner Classic Movies	4/94
Viewers Choice	11/85
Viewers Choice: Continuous Hits 1,2,3	2/93
Viewers Choice: Hot Choice (formerly Viewers Choice 2)	6/86

Table A-4
National Programming Services Without A Cable Operator Holding an Ownership Interest

Network	*Began*
Adam & Eve Channel	2/94
Adultvision	7/95
A&E Television Network (A&E)	2/84
All News Channel	11/95
America's Health Network	3/96
ANA Television	12/91
Asian American Satellite TV	1/92
Bloomberg Information Television	1/95
Cable Video Store	4/86
Canal de Noticias NBC	3/93
c/net: The Computer Network	1/95
Canal Sur	8/91
Channel America Television Network	6/88
Cine Latino	12/94 in US
Classic Arts Showcase	5/94
Classic Sports Network	5/95
CMT: Country Music Television	2/83
CNBC	4/89
Consumer Resource Network	12/94
The Crime Channel	7/93
Deep Dish TV	1986
The Disney Channel	4/83
The ECOLOGY Channel	11/94
The Employment Channel	2/92
ESPN	9/79
ESPN2	10/93
ESPNews	11/96
Ethnic-American Broadcasting Co. LP	1/96
EWTN: Global Catholic Network	8/81
Eye on People	3/97
The Filipino Channel	4/94
Flix	8/92
Fox News Channel	10/96
FoxNet	7/91
fXM: Movies from Fox	11/94
Galavisión	10/79
The Game Show Network	12/94
Gay Entertainment Television	12/95
Global Shopping Network	3/96
The History Channel	1/95
Home and Garden Television	12/94
HTV	8/95
The Inspirational Network (INSP)	4/78
Jewish Television Network	1981

Table A-4 Continued

Network	Began
Kaleidoscope: America's Disability Network (incorporating the Silent Network)	6/90 (ADN)4/84 (TSN)
KTLA	3/88
Ladbroke Racing Channel	11/84
Las Vegas Television Network	11/91
Lifetime Television	2/84
The Movie Channel	12/79
MOR Music TV	8/92
MSNBC	7/96
MTV	8/81
MTV Networks Latin America (formerly MTV Latino)	10/93
M2: Music Television	8/96
The Music Zone	4/95
My Pet TV	9/96
NASA Television	1980
National & International Singles Television Network	4/95
NET - Political NewsTalk Network (formerly National Empowerment Television)	12/93
Network One	12/93
NewsTalk Television (formerly The Talk Channel)	10/94
Newsworld International	9/94
Nickelodeon/Nick at Nite	4/79 - 7/85
Nick at Nite's TV Land	4/96
Nostalgia Television	2/85
Outdoor Channel	4/93
Ovation	4/96
Planet Central Television	5/95
Playboy TV	11/82
Sci-fi	9/92
SCOLA	8/87
Shop at Home	6/86
Showtime	7/76
SingleVision	6/94
Spice	5/89
Student Film Network	11/94
Sundance Channel	2/96
Telemundo	1/87
TNN: The Nashville Network	3/83
Total Communications Network	11/95
The Travel Channel	2/87
Trinity Broadcasting Network	5/73
Trio	9/94
Tropical Television	1996
TV Asia	4/93
TV JAPAN	7/91
U Network	10/89
Univision	9/61
USA Network	4/80

Table A-4 Continued

Network	Began
ValueVision	10/91
VH-1	1/85
Via TV Network	8/93
Video Catalog Channel	10/91
The Weather Channel	5/82
WGN	11/78
WorldJazz	7/95
Worship	9/92
WPIX	5/84
WSBK	2/88
WWOR	4/79
Z Music	3/93

TABLE A-5
MVPD SUBSCRIBER SHARES AND CONCENTRATION AS MEASURED BY THE HERFINDAHL-HIRSCHMANN INDEX (HHI)

MVPDs	Subscribers	MVPD Subscriber Share (Percent)	HHI Value
TCI Communications, Inc. (1)	14,370,000	19.29 %	372.05
Time Warner Cable	11,852,000	15.91	253.09
MediaOne	4,869,000	6.54	42.71
Comcast Corporation	4,290,000	5.76	33.16
Cox Communications, Inc.	3,249,000	4.36	19.02
DirecTV	2,520,000	3.38	11.44
Cablevision Systems Corporation	2,453,000	3.29	10.84
Adelphia Communications	1,856,000	2.49	6.21
Primestar	1,825,000	2.45	6.00
Jones Intercable, Inc.	1,398,000	1.88	3.52
Marcus Cable Partners	1,261,000	1.69	2.86
Century Communications	1,257,000	1.69	2.85
Lenfest Communications	1,127,000	1.51	2.29
Falcon Cable TV	1,059,000	1.42	2.02
InterMedia Partners	937,000	1.26	1.58
Charter Communications	933,000	1.25	1.57
Prime Cable	770,000	1.03	1.07
Total (2)	56,026,000	75.20 %	772.29

Source: Subscriber data from Paul Kagan Associates, Inc., *Cable TV Investor,* May 20, 1997, as of January 31, 1997. DBS Subs as of May 1997 from SkyREPORT. Total MVPD subscribers, 74.5 million, as of May 1997.

July 23, 1997

Notes:

(1) TCI Communications, Inc. subscriber data includes customers served by TCI and its consolidated subsidiaries and does not include satellite subscribers. This data also does not reflect subscribers of cable companies in which TCI has an interest accounted for by the equity (TCI investment of 20 to 50 percent) or cost (TCI investment of less than 20 percent) methods. If all of TCI's cable interests are included, TCI would have 15,781,000 subscribers, or 21.2 percent of the MVPD market, and the HHI would be 848.49.

(2) Although it is desirable to include all firms in the market in the HHI calculation, small fringe firms do not affect the HHI significantly and therefore are not critical. The top 17 MVPDs were used here because beyond the 17 largest each smaller company captures less than one percent of the market and the square of a number less than one will have little impact on the value of the index. The top 17 MVPDs serve approximately 56 million subscribers, or about 75 percent of all MVPD subscribers.

APPENDIX B

AN ASSESSMENT
OF
MULTICHANNEL VIDEO COMPETITION

ECONOMISTS INCORPORATED
WASHINGTON, D.C.

JULY 1997

AN ASSESSMENT OF MULTICHANNEL VIDEO COMPETITION

I. INTRODUCTION AND SUMMARY

The Commission's *1996 Competition Report* states that, in all but a few local markets, product differentiation, high concentration based on subscribers, and impediments to entry "mean that the structural conditions of markets for the delivery of video programming are conducive to the exercise of market power by cable operators."[1] The report suggests that increases in cable television service prices and subscribership during 1996 confirm that cable operators face limited competition (¶128).

While the Commission's report goes into some detail in describing responses of cable operators to entry into delivery of video programming by telephone companies (¶¶201-232), with regard to responses to entry by direct broadcast satellite (DBS) services it observes simply that "some cable system operators appear to be taking steps to improve their service offerings in response to the availability of DBS service" (¶4) and "at least one major cable MSO has announced that it is upgrading its systems to offer increased channel capacity and new programming in response to the nationwide presence of DBS" (¶128). Regarding competition between cable and DBS, the emphasis in the Commission's report is on ways in which DBS services are differentiated from cable services, as well as on the potential for product differentiation to reduce price competition (¶¶123-125).[2]

The present report provides further evidence on the competitive responses of cable operators to entry by DBS. Contrary to the emphasis given to product differentiation between cable and DBS in the Commission's *1996 Competition Report*, cable system operators have responded to competition from DBS by repositioning their services in a number of ways that reduce the differences between what is offered by cable and DBS. For example, cable operators have moved formerly pay services such as The Disney Channel and regional sports channels to their regulated programming packages in response to similar treatment of these channels by DBS providers as well as other factors. Also, cable operators have accelerated the expansion of their channel capacities since the introduction of DBS, although competition from DBS probably is not the sole explanation for this acceleration. Cable operators are now upgrading to a bandwidth of as much as 750 MHz, capable of delivering 125 analog channels, and to digital transmission, which permits delivery of more channels using a given bandwidth.

The increase in the quality and quantity of programming services in regulated packages offered by cable operators amounts to a repositioning of cable service in significant part in response to competition from DBS. It would not be surprising to find that such a repositioning was accompanied by higher prices for the improved regulated packages. Consumers may clearly be made better off when they obtain a superior product even if it has a higher price.

Repositionings of products and services of the types undertaken by cable operators are a frequent response to entry. The present report provides a number of examples: the response of U.S. auto makers to entry by high quality Japanese cars, the response of incumbent ice cream companies to the entry of Häagen Dazs and other suppliers of superpremium ice creams, the response of traditional supermarkets to entry by Fresh Fields and other natural foods supermarkets, and the response of incumbent department stores to the entry of Nordstrom.

Notwithstanding repositioning, the competitive responses by cable operators to entry by DBS and other factors have resulted in price reductions. For example, where a cable operator has added a formerly pay service such as The Disney Channel or a regional sports channel to a regulated package of services, the combined price of the former regulated package plus the added service has declined substantially.

The fact that cable presently has roughly a dozen times as many subscribers as does DBS does not imply that DBS does not exert substantial competitive pressure on cable operators. Entrants that initially have small shares of sales may have an important competitive effect on incumbents with much larger shares. As an illustration, the present report discusses the responses of Eastman Kodak to Fuji's entry into the U.S. market for photographic film and single-use cameras.

II. COMPETITION FROM DBS

Direct broadcast satellite services are offered by four independent suppliers: DirecTV/United States Satellite Broadcasting (USSB), PrimeStar, EchoStar, and AlphaStar. At the end of May 1997, subscriber numbers were: DirecTV, 2.57 million, of which 1.30 million were also USSB subscribers; USSB, 130,000, not including those also subscribing to DirecTV; PrimeStar, 1.88 million; EchoStar, 545,000; and AlphaStar, 51,000. The increase in DBS subscribers in the year ending March 1997 was 2.3 million or 90 percent.[3]

Each DBS service (treating DirecTV and USSB as one service) delivers 100 or more digital video and audio channels. DirecTV offers approximately 164 video and 31 audio channels, while USSB offers 25 additional video channels (with no overlap of DirecTV channels) to the same customers. By comparison, almost 46 percent of cable subscribers obtain their service from cable systems with an analog channel capacity of 53 or lower.[4]

DBS services generally offer more basic channels, including regional sports channels, than do cable services, and they include The Disney Channel and one regional sports channel in their standard packages of basic programming services.[5] DBS services also offer far more premium movie and pay-per-view channels than do cable systems. The result is that many DBS subscribers were previously among the heaviest purchasers of programming services from their cable systems,[6] and loss of these customers has an effect on cable system profits greater than simple subscriber numbers would suggest.

III. COMPETITIVE RESPONSES OF CABLE SYSTEMS TO DBS

A. Overview

Entry of DBS services has increased competition faced by cable operators in selling regulated and other services. The risk and cost to cable operators of losing a subscriber to a DBS competitor is particularly great in the case of subscribers who are interested in sports programming or who are heavy purchasers of cable programming, including premium movie channels and pay-per-view events. DBS threatens to siphon away cable's most profitable customers. As a result, cable operators have changed the characteristics of their services, particularly to increase their appeal to subscribers interested in sports programming, in The Disney Channel, and in having a large variety of programming choices.

Thus, in response to competition from DBS as well as other factors, cable operators have increased the quality of their regulated service packages, for example, by moving previously pay channels to basic service. This has increased the costs of those regulated packages, and hence prices for regulated service packages have increased. When there is an increase in the quality and quantity of services in a package, subscribers may be better off even when the new package has a higher price than the old one. Indeed, the point of the repositionings by cable operators is to make cable services more attractive.

Cable operators are unable to increase quality, quantity, and hence prices for regulated services only for the types of customers most likely to switch to DBS. This is the case because of a combination of technical and regulatory factors. For example, cable systems may not be able to retain their existing packages and supplement these with an additional package that combines the existing expanded basic package with some pay TV channels, because doing so may violate the 1992 Cable Act. The Cable Act prohibits cable operators from making prices of pay services contingent on whether a subscriber takes expanded basic service.

In any event, for customers that are willing to pay for both the full set of regulated programming services and the formerly pay channels that are added to the regulated package, there has been a clear price reduction. The combined price for these services has fallen.

B. Responses to DBS Entry by Three MSOs

Comcast, Cable One, and TCI provide examples of MSOs that are responding to competition from DBS by repositioning their services with measures such as addition of The Disney Channel and regional sports channels to regulated programming packages, expansion of channel capacity, and improvements in customer service. Of course, none of these measures is driven solely by competition from DBS.

According to Comcast's president, "DBS is a real competitor. They have a rich product offering, very good pictures. That said, they've proven to be an aggressive nudge to cable operators to get our plants rebuilt, offer more channels, and improve service."[7] Comcast's 1996 SEC Form 10-K states: "While DSS [digital satellite service] presents a competitive threat to cable, the Company currently is increasing channel capacity in many of its systems and upgrading its local customer service and technical support. The Company is currently in the process of implementing ten regional customer service call centers....These upgrades will enable to Company to introduce new premium channels, pay-per-view programming, interactive computer-based services and other communications services in order to enhance its ability to compete." According to a recent press report, "a case can be made that deals such as Comcast's $80 million digital settop order with Scientific-Atlanta are a direct response to DBS competition."[8]

Also, it is reported that Cable One (formerly Post-Newsweek Cable) views DBS as its primary competition, and that "many of the moves that the company is touting in its new, systemwide marketing campaign—such as adding The Disney Channel to its standard basic service and lowering prices for pay-per-view movies from $3.95 to $2.99—were designed specifically to counter DBS services." Cable One will also "offer five Home Box Office and four Showtime channels..., and it will market families of premium services, rather than the individual services" because "pay customers are most likely to be interested in DBS."[9]

While TCI cut back in late 1996 on system-rebuild plans that would have increased its capacity to offer non-video services, TCI announced that it was accelerating its introduction of digital compression in order to expand channel capacity to compete with DBS. According to one report, "TCI probably had felt they had another two or three years to do full upgrades. But now, with DBS prices falling so much faster than most expected, and given TCI's quite constrained balance sheet, it makes a lot of sense for it to forgo the core upgrade and plow its capital into putting digital compression boxes into systems where they have particularly low channel capacity—where DBS can offer a dramatically different and better service."[10] It was also reported that TCI was outfitting systems in an increasing number of markets "for the All TV digital tiers in order to keep customers from defecting to DBS," and that "TCI had expected to roll out its digital 'All TV' service in about 40 markets next year [1997], but Malone is now pushing that number to more than 100."[11]

TCI's rollout of the All TV digital service, which was to include initially an average of 40 additional channels, was further accelerated in early 1997. In February, TCI announced that it planned to have All TV reach 5 million of its 14 million subscribers by the end of 1997; in May, this figure was increased to 90 percent of its subscribers.[12] One press report states that "TCI...may have little choice but to launch this sort of ambitious effort. The rising popularity of fledgling rivals such as digital satellite TV services has put pressure on TCI to respond with its own offerings. The satellite systems have siphoned off some of TCI's most lucrative customers."[13] Another report states that TCI president "Hindery said he approaches digital TV as a 'defensive' product against competition from satellite services, but he said it could appeal to as many as 30% of the current subscriber base."[14]

C. Movement of Channels from Pay to Basic

DBS providers offer The Disney Channel and a regional sports channel as components for their standard packages of basic services. In response to competition from DBS as well as other factors, The Disney Channel and regional sports channels are increasingly offered in expanded basic service packages rather than as pay services by cable operators. As a result, the numbers of cable subscribers receiving these services has increased dramatically. According to a press report, "An increasing number of cable systems around the country are using the repositioning of the Disney Channel from a premium to a basic channel as the centerpiece of intensive, broader-based campaigns designed to combat competition and to enhance their image. What you're seeing is at least in part a reaction to the fact that almost all DBS (direct-broadcast satellite) competitors offer one or more Disney Channel feeds on their standard-service tier." [15]

For example, numerous cable systems moved SportsChannel's New York and Pacific regional networks from pay to expanded basic, increasing the combined number of households receiving these two services from 3.6 million in 1993 to 7.0 million in mid-1997. An agreement between SportsChannel New England and MediaOne will move the channel to the basic service package for 1.1 million subscribers in 1997. Similarly, numerous cable systems in the mid-Atlantic region repositioned Home Team Sports, increasing the number of subscribers receiving the channel from 2.5 million in 1993 to 3.6 million in mid-1996. Other regional sports channels that have been repositioned are SportsChannel Ohio and PASS Sports.[16]

Formerly pay regional sports channels are significant additions to expanded basic service. On cable systems where they continue to be offered as à la carte pay services, the regional sports channels named in the preceding paragraph are priced from $6.95 to $15.00 per month, with a median of about $10.45 per month.[17]

The Disney Channel had slightly more than 7 million pay subscribers at the end of 1992. By the end of March 1997, a substantial share of cable systems had moved the channel from pay to expanded basic service, with the result that it had 22.1 million basic subscribers and 4.9 million pay units.[18] Paul Kagan Associates indicates that as an à la carte premium service The Disney Channel has a retail price of about $4.95 to $11.95 per month.[19] Thus, The Disney Channel is a substantial addition to expanded basic service packages.

D. Increase in Channel Capacity

The expansion of cable channel capacity has accelerated since the introduction of DBS, according to estimates by Paul Kagan Associates. The number of channels available to the average television household increased by 10 between 1994 and 1996, compared to 6 between 1992 and 1994 and 4 between 1990 and 1992.[20]

A similar acceleration is indicated by the fact that the percentage of all basic cable subscribers that obtained their service from systems with 54 or more channels increased from 40.8 percent in October 1994 to 54.4 percent in October 1996, a difference of 13.6 percent over 24 months. By comparison, the percentage of cable subscribers that obtained their service from systems with 54 or more channels increased from 28.4 percent in April 1991 to 37.9 percent in November 1993, a difference of 9.5 percent over 31 months.[21]

Furthermore, some cable operators are upgrading their systems to a bandwidth of as much as 750MHz, capable of delivering about 125 analog channels at 6MHz per channel, and Paul Kagan Associates reports that "Sparked by Direct Broadcast Satellite (DBS) competition, cable operators are quickly upgrading to digital."[22]

E. Summary

Cable operators have responded to the entry of DBS as well as other factors by repositioning cable services to more closely resemble DBS services with respect to several important characteristics. This repositioning has been undertaken to make cable service more attractive and to reduce the loss of subscribers to DBS and other competitors. Cable systems have added popular, previously pay programming services such as The Disney Channel and regional sports channels to their expanded basic services, taken steps to expand channel capacity, accelerated the introduction of high quality digital transmission, and taken steps to improve customer service. Addition of The Disney Channel and regional sports channels to expanded basic services has also reduced prices to consumers that previously purchased both expanded basic service and The Disney Channel or regional sports programming as pay services.

IV. Economic Theories Relating to Competitive Responses to New Entry

There is a substantial theoretical economics literature that analyzes the effects of market structure, and thus of changes in market structure associated with entry, on product or service characteristics—including "quality." Some of this literature analyzes effects of market structure and entry under the assumption that at any given time only one product quality is supplied to the market even when there is more than one seller. Other literature analyzes the effects of market structure and entry under the alternative assumption that different producers may supply differentiated products, that is, products with different characteristics such as different levels of quality. These two types of economic theories or models are discussed in the following two subsections.

A. Theories in Which One Quality is Supplied

A number of economic models make the simplifying assumption that at any given time only one product or service quality is supplied even when there is more than one seller in a market. These models can be used to determine how the level of product quality in a market is affected by consumer tastes, costs, the extent of competition, and regulation. Analyses using these models have demonstrated that the effects of entry and greater competition on quality, prices, and total sales of a product are not always in the directions that might be expected.[23] These models show that entry and greater competition can lead to an increase or decrease in quality, an increase or decrease in prices, and an increase or decrease in total sales in the market. For example, entry and greater competition can lead to an increase in quality, an increase in prices, and an increase in sales all at the same time. On the other hand, entry and greater competition can lead to a reduction in all three.

Also, entry and greater competition may make some consumers worse off while they make others better off. For example, if competition leads to a large increase in quality accompanied by a moderate increase in prices, consumers with a very low willingness to pay for higher quality may be worse off.

This economics literature sheds light on the repositioning of cable services. The literature demonstrates that, while entry and greater competition may lead to lower prices in some markets, entry and greater competition may also lead to higher prices along with higher quality in other markets. In any specific market, the directions of the effects of entry and greater competition on quality, prices, and total sales depend on consumers' preferences, costs, regulation and other variables.