Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Annual Report and Analysis of Competitive Market Conditions with Respect to Domestic and International Satellite Communications Services	)	IB Docket No. 06-67
	)	
	)	

FIRST REPORT

Adopted: March 22,2007 Released: March 26,2007

By the Commission: Commissioners Copps and Adelstein concumng and issuing separate statements; Commissioner Tate issuing a separate statement.

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

1. This is the first annual report by the Federal Communications Commission to the United States Congress on the status of competition in the market for domestic and international satellite communications services. In this Report, we conclude that there is effective competition in both wholesale and retail satellite services markets. The Report is retrospective, focusing on conditions prevailing in the satellite services marketplace from the beginning **of** the **2000** calendar year through the 2006 calendar year.

2. In this Report, the Commission concludes that the market for commercial communications satellite services is effectively competitive. We discuss the structure of the satellite communications services industry and describe six wholesale markets or groups of markets (three domestic and three international) and two retail markets or groups of markets (both domestic). Within these markets, we calculate a range of standard economic indicators commonly used to assess market conduct, concentration, and performance. We also discuss the Commission's policies regarding foreign participants' entry into the U.S. market, as well as U.S. companies' access to foreign markets.

3. For wholesale markets. we find that four competitors held 80 percent **of** the domestic transponders activated (Intelsat, SES Americom, PanAmSat and New Skies) during the relevant period. Subsequent to the collection of these data, Intelsat and PanAmSat merged, and **SES** and New Skies merged. We find relatively high profitability ratios for the major wholesale market participants coupled with limited and declining market power based on Lerner Index proxy measurements. We also note that participants in the network services markets continue to post significant revenues, even **as** they are experiencing increased competition from terrestrial providers.

4. For retail markets, we assess performance for the Satellite Digital Audio Radio Service market ("SDARS"), but have insufficient data to assess performance for satellite providers in the Fixed Wireless Broadband market. As expected **for a** relatively new service, neither provider is currently profitable, but growth rates for both subscribers and revenues are high and revenues per user have begun to rise. Two-way satellite-based fixed wireless broadband service was **first** offered only **in *2005,*** and satellite-based broadband **of** all types represents less that 1 percent of the U.S. broadband subscriber base. The sector does show growing subscriber up-take and increasing competition among three emerging providers. Because satellite-based multichannel video programming distributors ("MVPD) and mobile satellite services ("MSS") are discussed in other annual competition reports issued by the Commission, we do not address them here.

II. INTRODUCTION

5. This is the first annual report (the "Report") by the Federal Communications Commission ("the Commission") to the U.S. Congress on the status of competition in the markets for domestic and

international satellite communications services, as required by section 4 of an Act of July 12, 2005, Pub. L. No. 109-34, 119 Stat. 377 (2005), which amended the Communications Satellite Act of 1962 and is codified at 47 U.S.C. § 703 ("section 703").

6. In section 703(b), Congress directed that the Commission include in this Report,

> "(1) an identification of the number and market share of competitors in domestic and international satellite markets; (2) an analysis of whether there is effective competition in the market for domestic and international satellite services; and (3) a list of any foreign nations in which legal or regulatory practices restrict access to the market for satellite services in such nation in a manner that undermines competition or favors a particular competitor or set of competitors."[2]

7. Although section 703(b)(2) directs this Report to analyze "whether there is effective competition in the market for domestic and international satellite services,"[3] the term "effective competition" is not defined in section 703 or in the context of satellite services more generally.[4] Accordingly, to analyze effective competition, we rely on a range of standard indicators commonly used for the assessment of effective competition.

A. Sources of Information

8. The information and analysis provided in this Report are based on a wide variety of publicly available sources. In March 2006, the International Bureau (the "Bureau") released a Public Notice (the "Notice") seeking data and information in order to evaluate satellite competition.[5] Seven parties submitted comments or reply comments in response to the Notice.[6]

9. In addition to information submitted in response to the Notice in this docket, we relied upon a wide variety of publicly available sources of industry data. These sources included: company filings with the Securities and Exchange Commission. data compiled and released by trade associations and by other government agencies, reports by securities analysts and other research companies and consultants, company news releases and websites. newspaper and periodical articles, and various public Commission filings, decisions, and databases. We also conducted numerous discussions with members of the industry, industry associations, industry observers. and financial analysts.

B. Structure and Analytical Approach of the Report

10. After a brief history of the satellite communications industry, the Report describes the relevant markets for commercial satellite communications services, in the U.S. and internationally, and

---

[1] 47 U.S.C. §§ 701 *et seq*

[2] 47 U.S.C. § 703(b)(1)-(3).

[3] 47 U.S.C. § 703(b)(2)

[4] Although "effective competition" is defined in section 623 of the Communications Act of 1934, as amended (the "Act"), 47 U.S.C. § 543(l)(1), we find that the definition in section 623 is inapplicable to satellite communications services.

[5] *IB Invites Comment for Annual Report to Congress on Status of Competition in the Satellite Services Marker,* Public Notice, 21 FCC Rcd. 2967 (2006) (the *"Notice").* Although the *Notice* asked commenten to provide certain kinds of data and other information, we did not require commenters to provide such information, nor did we audit the data provided.

[6] Appendix A lists the commenters in this proceeding.

evaluates market performance in this sector.' In the Market Structure discussion, we identify and describe the markets relevant to this competition analysis, including the leading market participants. We also measure market concentration, provide information on recent relevant mergers and other transactions, and review various conditions affecting the ability of additional providers or classes of providers to enter the market. In the Market Conduct Section, we explore the conduct of buyers and sellers in the market and. in the Market Performance Section, we assess the performance of market participants using a variety of economic indicators, including market shares, market concentration, profitability, revenues and subscriber levels. Finally, the Competition Assessment and Conclusion provides a summary of both the structural and the behavioral characteristics of the satellite industry found in the Report.

III. MARKET STRUCTURE

A. Summary

11. In this inaugural Report, we begin with a history that explains how the satellite communications industry attained its present broad outlines. Then we describe relevant markets in current satellite communications services that we use in our later economic analysis of the industry.

12. In this Report. we do not discuss satellite-based MVPD services because the Commission analyzes the overall video market in a separate annual report to Congress.[8] Similarly, we do not discuss mobile satellite services, as they are encompassed in the Commission's annual report to Congress on Commercial Mobile Radio Service ("CMRS").[9]

B. Organizational Structure of the Satellite Communications Industry

1. Historical Review of Industry Structure Before 2000

13. Early legislative and regulatory decisions fostered the beginnings of international and domestic Fixed Satellite Services ("FSS") sector. In 1964, the United States and other nations formed what would become the intergovernmental organization, INTELSAT.[10] The *INTELSAT Agreement* entered into force on February **12.** 1973. In 1965, Comsat placed the first U.S. commercial geostationary

[7] The commercial satellite sector includes many diverse industries, including the manufacture of spacecraft and satellite ground equipment, and the manufacture of launch vehicles and provision **of** launch services. The sector also includes numerous service applications that utilize satellite technology platforms, including both communications services and non-communications services, such as earth remote sensing services, weather observation services, military applications, scientific research, and global positioning services. In this Report, we focus on the commercial satellite-based services sector and those applications that are within the definition of communications services under the Act. We do not evaluate the satellite manufacturing or launch sectors, nor do we assess non-communications satellite applications, as we view these as outside the scope of Congress' request.

[8] EchoStar asserts that we should not include this market in our report because it is covered in the Commission's annual ***Video Competition Report.*** EchoStar Comments at 1-5. We agree with EchoStar. ***See Annual Assessment of the Status*** of *Competition in the Market for the Delivery* of ***Video Programming,*** Twelfth Annual Report, 21 FCC Rcd 2503 (2006) ***("Twelfth MVPD Competition Report").***

[9] ***See, e.g., Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services,*** Tenth Report, 20 **FCC** Rcd 15908 (2005).

[10] Agreement Establishing Interim Arrangements for a Global Commercial Communications Satellite System, Aug. **20,** 1964, **15 U.S.T.** 1705; Agreement Relating to the International Telecommunications Satellite Organization, Aug. 20, 1971, 23 U.S.T. 3813.

satellite into service to supplement communications facilities between the United States and Europe." In 1966, the Commission opened a docket to explore questions associated with possible authorization of domestic communications satellite facilities to nongovernmental entities and, in 1970, the Commission adopted a policy of affording reasonable opportunity for entry into the domestic communications satellite field by qualified applicants.[12]

14. The Commission granted its first group of domestic FSS C-band authorizations in 1973.[13] By 1980. there were nine U.S. domestic satellites in orbit, all in the C-band.[14] Although the domestic satellite carriers initially provided service between a few general-purpose earth stations located near major metropolitan areas, they subsequently offered new and specialized communications services as carriers and users added additional earth stations to the networks.[15] During the 1970s, these U.S. domestic satellites ("domsats") provided FSS solely within the United States. International services were provided using INTELSAT space segment exclusively through COMSAT, a U.S. licensee, which served as the U.S. signatory to INTELSAT.

15. During the 1980s, the Commission granted an additional four groups of domestic FSS authorizations – in 1980, 1983, 1985, and 1988.[16] Beginning in 1981, the Commission had begun to

[11] ***See Communications Satellite Corporation,*** 38 FCC 1298 (1965); ***see also Assignment of Orbital Locations to Space Stations in the Domestic Fixed-Satellite Service,*** Memorandum Opinion and Order, 84 FCC 2d 584, 585, ¶ 5 (1981) ***("1980 Orbit Assignment Order").***

[12] *Establishment* ***of Domestic*** *Communications-Satellite* ***Facilities*** *by* ***Non-Governmental Entities,*** First Report and Order, 22 FCC 2d 86 (1970), Second Report and Order, 35 FCC 2d 844 (1972), ***recon.,*** Memorandum Opinion and Order, 38 FCC 2d 665 (1972).

[13] ***See Western Union Telegraph Company,*** Orders and Authorizations, 38 FCC 2d 1197, 40 FCC 2d 1123, and 41 FCC 2d 379 (1973); ***American Telephone and Telegraph Co.***, Order and Authorization, 42 FCC 2d 654 (1973); ***Comsat General Corp.,*** Orders and Authorizations, 42 FCC 2d 677 (1973) and 45 FCC 2d 444 (1974); ***American Satellite Corporation.*** Order and Authorization, 43 FCC 2d 348 (1973); ***GTE Satellite Corp.***, Order and Authorization, 43 FCC 2d 1141 (1973). ***See also RCA Global Communications,*** Order and Authorization, 42 FCC 2d 774 (1973) (authorizing interim commercial satellite system using Telesat Canada's satellites and U.S. earth stations).

[14] Western Union Telegraph Company, RCA Global Communications, and COMSAT General Corporation launched these satellites and put them into service in the mid- to late-1970s. ***See 1980 Orbit Assignment Order,*** 84 FCC 2d at 587, ¶ 7 & nn.9-12 (by December, 1980, Western Union Telegraph Company operated three satellites, RCA American Communications, Inc. operated two, COMSAT General Corporation operated three for use by AT&T and GTE Satellite Corporation, and the ninth satellite recently had been launched by Satellite Business Systems). ***Id.***

[15] ***Id.*** at 587-88, ¶ 8 & nn.14-19. In the 1970s, the Commission approved customer-owned earth stations, distribution of diversified program material to cable television systems, the use of small, lower-cost antennas for transmission and reception, interconnection of non-commercial broadcast stations, carrier-provided earth stations directly on customer premises, and deregulation of receive-only earth stations. ***Id.***

[16] ***See 1980 Orbit Assignment Order,*** 84 FCC 2d at 584; ***Assignment of Orbital Locations to Space Stations in the Domestic Fixed-Satellite Service,*** Memorandum Opinion and Order, 94 FCC 2d 129 (1983), ***recon.*** FCC 84-32 (Feb. 2, 1984), *further* ***recon.*** (May 15, 1984); ***Assignment of Orbital Locations to Space Stations in the Domestic Fixed-Satellite Service,*** Memorandum Opinion and Order, 50 Fed. Reg. 35228 (1985) ***("1985 Orbit Assignment Order"), recon. denied,*** FCC 86-376 (rel. Aug. 26, 1986); ***Assignment of Orbital Locations to Space Stations in the Domestic Fixed-Sarellite Service,*** Memorandum Opinion and Order, 3 FCC Rcd 6972 (1988) ***("1988 Orbit Assignment Order").*** There was little overlap between the services provided by INTELSAT and domestic FSS operators. ***See Transborder Satellite Video Services,*** Memorandum Opinion, Order and Authorization, 88 FCC 2d 258 (1981) ***("Transborder Satellite Decision")*** (permitting domestic satellite operators to provide international public telecommunications services within the coverage areas of their satellites, where INTELSAT did not provide the service or it was clearly uneconomical or impractical to use INTELSAT facilities for the service).

authorize domestic satellites to operate in the additional Ku-band frequencies." By late 1988, there were 42 existing and recently authorized domestic FSS satellites in the C- and Ku-bands, including eleven hybrids in those bands, an almost five-fold increase over the nine satellites that had been in orbit just eight years earlier.[18] Additionally, beginning in 1981, the Commission approved applications to use U.S. domsats to provide certain international services, conditioned on successful coordination with INTELSAT and the concurrence of other involved countries." In keeping with US. obligations under the INTELSAT Treaty, most applications involved instances where use of the INTELSAT system clearly would be uneconomical or impractical.[20] Thus, there was little overlap between the services provided by INTELSAT and the U S. domsats.

16. In the international arena, the Commission authorized the entry of new FSS "separate satellite" systems that began to compete with INTELSAT for international FSS services, including services to and from the United States?' Due to U.S. obligations under the INTELSAT Treaty, the authorized separate satellite systems were not permitted to utilize their capacity for domestic US. communications.[22] Therefore, the Commission made a clear distinction between those US-licensed FSS satellite operators providing domestic satellite capacity and those providing international satellite capacity.

17. In the 1990s, the Commission allocated spectrum and issued service rules for multiple additional satellite services. Spectrum was allocated to create two new non-geostationary satellite

[17] ***1980 Orbit Assignment Order,*** 84 FCC 2d at 599, ¶ 56 & n.77 (authorizing two Ku-band systems and two hybrid C-/Ku-band systems).

[18] ***1988 Orbit Assignment Order, 3*** FCC Rcd at 6973, ¶ 8 & n.30 (42 in-orbit satellites, including 11 hybrid satellites, in 51 C- and Ku-band orbital slots, authorized to eleven satellite companies). To maximize the number ofsatellites that could be accommodated in orbit in order to meet increasing demand for satellite service, in 1983 the Commission adopted a 2° spacing policy for both the C- and Ku-bands. which it adopted immediately for the Ku-band and implemented in 1985 For the C-band. ***See Licensing of Space Stations in the Domestic Fixed-Satellite Service,*** Report and Order, 54 Rad. Reg. 2d (P&F) 577,589 (1983), ***recon.,*** Memorandum Opinion and Order, 99 FCC 2d 737 (1985); ***see also 1985 Orbit Assignment Order, 50*** Fed. Reg. at 35229, ¶ 2.

[19] ***See Transborder Satellite Decision,*** 88 FCC 2d 258 (permitting domestic satellite operators to provide international public telecommunications services within the coverage areas of their satellites, where INTELSAT did not provide the service or it was clearly uneconomical or impractical to use INTELSAT facilities for the service); ***see also Amendment to the Commission's Regulatory Policies Government Domestic Fired Satellites and Separate International Satellite Systems,*** Notice of Proposed Rulemaking, 10 FCC Rcd 7789, 7790, ¶ 5 & n. 6 (1995) ***("DISCO I NPRM")*** (describing implementation of Transborder Policy).

[20] ***DISCO I NPRM,*** 10 FCC Rcd at 7790, ¶ 5 (***e.g.,*** the Commission allowed domsats to provide video programming to neighboring countries within their coverage areas, where use of INTELSAT would have required multiple satellite hops, terrestrial facilities, and collocated domestic and international eanh stations).

[21] ***Establishment of Satellite Systems Providing International Communications,*** 101 FCC 2d 1046 (1985) ***("Separate Systems Decision"), recon.,*** 61 Rad. Reg. 2d (P&F) 649 (1986), ***further recon.,*** 1 FCC Rcd 439 (1986) (permitting establishment of U.S. international satellite systems separate from Intelsat, but initially restricting separate systems to providing services through sale or long-term lease of capacity for communications not interconnected with public switched networks); ***Permissible Services of U.S. Licensed International Communications Satellite Systems Separate from the International Telecommunications Satellite Organization (Intelsat),*** Order, 7 FCC Rcd 2313 (1992) (eliminating limitation on separate satellite systems interconnected with public switched network effective January 1, 1997), ***recon. denied,*** 8 FCC Rcd 5122 (1993).

[22] ***See Separate Systems Decision,*** 101 FCC 2d at 1172 & n. *162*

services provided by constellations of low-Earth orbit ("LEO) satellites, the Little LEO[23] and Big LEO[24] services. Additional FSS spectrum was allocated for other geostationary satellites in the Ka-band,[25] and spectrum was allocated for non-geostationary satellite orbit systems in both the Ka-band and Ku-band satellite spectrum.[26]

18. In 1996, the Commission eliminated the regulatory dichotomy between the provision of international and domestic services." As a result, U.S. international and domestic satellite providers began to provide both global and domestic U.S. satellite services. With the signing of the World Trade Organization ("WTO) Basic Telecom Agreement in 1997, the Commission adopted new rules and procedures for U.S. market entry by foreign satellite providers from WTO Member countries.[28]

19. In 1997, the Commission adopted rules for SDARS,[29] building on decisions to open

[23] *Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum to the Fixed-Satellite Service and the Mobile-Satellite Service for Low-Earth Orbit Satellites.* Report and Order, 8 FCC Rcd 1812 (1993); *Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Non-Voice, Non-Geostationary Mobile-Satellite Service,* Report and Order, 8 FCC Rcd 8450 (1993).

[24] *Amendment of Section 2.106 of the Commission's Rules to Allocate the 1610-1626.5 MHz and the 2483.5-2200 MHz Bands for Use by the Mobile-Satellite Service, Including Non-geostationary Satellites,* Report and Order, 9 FCC Rcd 536 (1994); *Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands,* Report and Order, 9 FCC Rcd 5936 (1994), *on recon.,* 11 FCC Rcd 12861 (1996).

[25] *Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fired Satellite Services,* First Report and Order, 12 FCC Rcd 12545, Second Report and Order, 12 FCC Rcd 15082, Third Report and Order, 12 FCC Rcd 22310 (1997).

[26] *The Establishment of Policies and Service Rules for the Non-Geostationary Satellite Orbit, Fixed Satellite Service in the Ku-Band,* Report and Order and Further Notice of Proposed Rulemaking, 17 FCC Rcd 7841 (2002); *The Establishment of Policies and Service Rules for the Non-Geostationary Satellite Orbit, Fired Satellite Service in the Ka-Band,* Report and Order, 18 FCC Rcd 14708 (2003).

[27] *Amendment to the Commission's Regulatory Policies Governing Domestic Fixed Satellites and Separate International Satellite Systems, and Petition for Declaratory Ruling Regarding the Use of Transponders to Provide International DBS Service,* Report and Order, 11 FCC Rcd 2429 (1996) *("DISCO Order")* (adopting policy permitting all U.S.-licensed FSS, MSS, and DBS systems to offer both domestic and international services, removing "outdated regulatory barriers to greater competition in satellite communications services by eliminating distinction between U.S. domestic and separate satellite systems and allowing both space- and earth-segment operators to provide both domestic and international services).

[28] *Amendment to the Commission's Regulatory Policies Governing Domestic Fired Satellites and Separate International Satellite Systems, and Petition for Declaratory Ruling Regarding the Use of Transponders to Provide International DBS Service,* Report and Order, 12 FCC Rcd 24094 (1997) (*"DISCO II Order"),* First Order *on* Reconsideration, 15 FCC Rcd 7207 (1999) (adopting declaratory ruling procedure by which non-U.S. licensed satellite operators might request authority to provide space segment capacity service to licensed earth stations in the United States, where previously only U.S. earth station operator could request service from non-U.S. licensed satellite operator (Permitted Space Station List); also adopting procedure to permit U.S. earth station licensee to access particular non-U.S. licensed satellite without further approval (ALSAT designation)).

[29] SDARS is a radiocommunication service in which audio programming is digitally transmitted by one or more space stations directly to fixed, mobile, and/or portable stations, and which may involve complementary repeating terrestrial transmitters, telemetry, tracking and control facilities. 47 C.F.R. § 25.201; see also ¶¶ 55-57 *infra.*

spectrum for such services in the 1980s.[30] Market enhy followed, with XM initiating service in 2002 and Sinus initiating service in 2003.[31] In addition, the Commission authorized two Worldspace spacecraft in non-SDARS bands, which provide digital audio radio services outside of the U.S. to subscribers in Asia, the Middle East, Africa, and Europe.[32]

2. Organizational Changes Since 2000

20. Today's FSS markets reflect several organizational changes occurring in the period from 2000 to the present, including the privatization of INTELSAT, various mergers and acquisitions, and new entry. In 2000, the intergovernmental organization INTELSAT competed in providing FSS satellite capacity for services to and from the United States with companies that, for the most part, also provided U.S. domestic FSS services: PanAmSat; GE Americom and its subsidiary Columbia Communications Corporation; Loral Skynet; and New Skies. Today, the commercial FSS sector in the United States is composed of two major participants and a number of smaller providers, including Loral Skynet; a number of foreign-licensed providers such as New Skies, Telesat Canada, and Satmex: and Direct Broadcast Satellite ("DBS") providers EchoStar, DirecTV, and Dominion Video Satellite. which hold FSS licenses. The two major providers of FSS transponder capacity are SES Global, through its subsidiaries SES Americom and New Skies, and Intelsat, the successor lo the intergovernmental organization INTELSAT, which recently acquired FSS provider PanAmSat. Both entities compete internationally and in U.S. domestic FSS markets. Additionally, Loral Space and Communications and its partner, Canada's Public Sector Pension Investment Board, recently announced plans to acquire Telesat Canada.[33]

21. A major change in the FSS sector involved the privatization of INTELSAT. In 2000, Congress enacted the ORBIT Act to promote a more competitive global satellite communications services market for the benefit of consumers and providers of satellite service and equipment.[34] The ORBIT Act mandated the full privatization of the former intergovernmental satellite organization INTELSAT. In 2000, the Commission granted conditional licensing authority to lntelsat LLC, a separate, privately held U.S. corporation created by lntelsat to hold U.S. satellite authorizations and associated space segment assets.[35] In 2001, the Commission determined that, once INTELSAT privatized, the use of space segment

---

[30] ***Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band,*** Report and Order, Memorandum Opinion and Order and Further Notice of Proposed Rulemaking, 12 FCC Rcd 5754 (1997) (adopting rules to auction two 12.5 MHz SDARS authorizations in the 2320-2332.5 and 2332.5-2345 MHz frequency bands).

[31] ***See Sirius Satellire Radio Inc., Application for Transfer of Control of Station Authorization,*** Order, 18 FCC Rcd 215 (2003), and ***XM Radio Inc.***, Order and Authorization, 20 FCC Rcd 1620, 1621, ¶ 3 (2005).

[32] ***Application of Afrispace, Inc./or Authority to Construct, Launch, and Operate a Subregional Africa and Middle Eastern Satellite Sound Broadcasting Transmission System,*** Order and Authorization, 15 FCC Rcd 1632 (1999); ***Afrispace, Inc. Application for Authority to Launch and Operate a Replacement Satellite, AfriStar-2, at 21° E.L. and to Co-locate it with AfriStar-1***, Order and Authorization, 21 FCC Rcd 17 (2006).

[33] Loral Skynet, ***Loral and*** PSP ***Investments Agree to Acquire Telesat Canada,*** http://www.loralskynet.com/news_121806.asp (visited Dec. 29, 2006)

[34] Open-Market Reorganization for the Betterment of International Telecommunications Act, Pub. L. No. 106-180, 114 Stat. 48 (2000), ***as amended,*** Pub. L. No. 107-233, 116 Stat. 1480 (2002), ***as amended,*** Pub. L. No. 108-228, 118 Stat. 644 (2004), ***as amended,*** Pub. L. No. 108-371, 118 Stat. 1752 (2004), ***us amended,*** Pub. L. No. 109-34, 119 Stat. 377 (2005); ***codified*** at 47 U.S.C. § 761, ***et seq***.

[35] ***See Application of Intelsat LLC for Authority to Operate, and to Further Construct, Launch, and Operate C-band and Ku-band Satellites that Form a Global Communications System in Geostationary Orbit,*** Memorandum Opinion, Order and Authorization, 15 FCC Rcd 15460 (2000), ***recon. denied,*** 15 FCC Rcd 25234 (2000), ***further proceedings***, 16 FCC Rcd 12280 (2001). Under this licensing authority, the Commission permitted Intelsat LLC's licenses to become effective upon privatization (*i.e.*, the transfer of Intelsat's satellites and associated assets to lntelsat and the

(continued....)

operated by Intelsat LLC for services to, from and within the United States would not harm competition in the telecommunications market of the United States.[36] INTELSAT privatized later in 2001.[37] Its successor, the privately held company Intelsat, became a U.S. licensee. In 2004, Intelsat acquired certain satellite assets from Loral that permitted Intelsat to enter the U.S. domestic video distribution market.[38] In 2005, the Commission determined that Intelsat was in compliance with the final privatization requirement of the ORBIT Act.[39]

22. The privatization of Intelsat appears to have had a positive effect on the domestic U.S. market. Privatization has given Intelsat the opportunity to develop new services for the U.S. market that potentially will result in the expansion of service options and providers for U.S. customers.[40] The privatized companies compete more effectively in providing service to U.S. commercial and governmental customers, and compete freely for U.S. satellite business opportunities, which have increased competition in the U.S. market.[41] Privatization also appears to have had a positive impact on

(Continued from previous page)
transfer of its International Telecommunications Union ("ITU") network filings to the U.S. registry). ***See id.,*** 15 FCC Rcd at 15461, ¶3.

[36] ***See Application of Intelsat LLC for Authority to Operate, and to Further Construct, Launch, and Operate C-band and Ku-band Satellites that Form a Global Communications System in Geostationary Orbit***, Memorandum Opinion, Order and Authorization, 16 FCC Rcd **12280, 12303,** ¶¶ 71, 73 **(2001) *("Intelsat LLC ORBIT Act Compliance Order")*** (finding that, although the Initial Public Offering ("IPO") required under the privatization requirements of the ORBIT Act had not yet been completed, INTELSAT would privatize in a manner consistent with the non-IPO privatization provisions of the ORBIT Act).

[37] Intelsat privatized and became a Commission license for its C- and Ku-band satellites and earth stations in July, **2001,** transferring its assets to a commercial corporation, Intelsat. Intelsat is a U.K. licensee for its Ka-band facilities. See ***Intelsat LLC ORBIT Act Compliance Order.***

[38] ***Loral Safellite, Inc. (Debtor-in-Possession) and Loral Spacecorn Corporation (Debtor-in-Possession), Assignors, and Inrelsat North America, LLC, Assignee, Applications for Consent to Assignments of Space Station Authorizations and Petition for Declaratory Ruling under Section 310(b)(4) of the Communications Act of 1934, as Amended,*** Order and Authorization, 19 FCC Rcd **2404** (2004). Prior to the Loral acquisition in 2004, Intelsat offered virtually no U.S. domestic services. *Id.* at **2418,** ¶ 32.

[39] **In 2001,** the Commission found that, although the Initial Public Offering ("IPO") required under the privatization requirements of the ORBIT Act had not yet been completed, Intelsat would privatize in a manner consistent with the non-IPO privatization provisions of the ORBIT Act, upon completion of its plans to distribute Intelsat LLC shares to its Signatories. Intelsat later distributed shares to its Signatories as it had planned. ***Intelsat LLC ORBIT Act Compliance Order,*** 16 FCC Rcd at 12290, ¶ **71.** In October **2004,** Congress amended the ORBIT Act, adding sections 621(5)(F) and (G), to provide a certification process as an alternative to the IPO requirements under sections 621(5)(A) and (B). **47** U.S.C. § 763(A)-(B), (F)-(G). In December 2004, the Commission, on delegated authority, authorized the transfer of control of Intelsat's licenses and authorizations to Zeus Holdings Limited (now Intelsat Holdings), a private equity group organized under the laws of Bermuda. ***See Inrelsat, Ltd., Transferor, and Zeus Holdings Limited, Transferee, Consolidafed Application for Consent to Transfer of Control of Holders of Title II and Title III Aufhorizations and Petition for Declaratory Ruling Under Section 310 of the Communications Act, as Amended,*** Order and Authorization, 19 FCC Rcd **24820** (2004). In April, **2005,** the Commission determined that Intelsat's certification was in compliance with sections 621(5)(F) and 621(5)(G) of the ORBIT Act. See ***Inrelsat, Ltd.. Petition for Declaratory Ruling that Inrelsat, Ltd. Complies with Section 621(5)(F) of the ORBIT Act***, Memorandum Opinion and Order, **20** FCC Rcd **8604 (2005).**

[40] ***FCC Report to Congress as Required by the ORBIT Act***, Seventh Report, 21 FCC Rcd **6740,6757 (2006) *("Seventh ORBIT Report").***

[41] ***Id.,*** **21** FCC Rcd at **6756.**

the global marketplace for satellite communications services.[42]

3. Current Industry Revenues

23. The Satellite Industry Association ("SJA") estimates, based on a mid-year 2006 study prepared by Futron Corporation (the "SIA/Futron Study"), that the world commercial satellite communications industry generated $88.8 billion in 2005, up 7.4% from $82.7 billion in 2004, and posted an annual growth of 6.7% for the period 2000-2005.[43] The SIA/Futron Study estimates that revenues from commercial satellite communications services amounted to *$52.8* billion in 2005, or 60% of overall satellite sector revenues in 2005, up from only 45% in 2000.[44] The SIA/Futron Study estimates that global revenues from retail services represented $45.5 billion or 86% of *2005* services revenues, with wholesale services representing the remainder.[45] For the United States only, The SIA/Futron Study estimates service revenues at $24 billion in 2005, up from $19.5 billion in 2004, with retail satellite services revenues representing 88.7% and wholesale satellite service revenues contributing 11.2%.[46]

C. Market Description and Identification of Market Participants

1. Summary

24. Consistent with accepted methods of analyzing competition in a business, this Report next describes relevant markets. Specifically, we describe three national wholesale product markets, each consisting of communications capacity that is provided to business and government customers within the United States.[47] We also describe two national retail product markets, each consisting of communications services provided to retail consumers within the United States. Several of these product markets may be groupings of smaller identifiable product markets that we have grouped to facilitate analysis.[48] Finally, we describe three international product markets each of which consists of communications service, wholesale or retail, between points in the United States and points in foreign countries. To simplify analysis, we do not consider each international route separately as we might in other contexts.

25. The markets and groups of markets we describe in this Report are:

- Domestic
  - Wholesale Services
    - Capacity for Video Contribution
    - Capacity for Video Distribution
    - Network Services
  - Retail Services
    - Fixed Satellite Broadband Services

---

[42] ***Id.***

[43] Satellite Industry Association and Futron Corporation, "Satellite Industry Indicators Fact Sheet," June **2006,** at **3.** The SIA/Futron Study does not include non-communications satellite services.

[44] Id. at 7.

[45] *Id.* at **8-10.**

[46] ***Id.***

[41] ***See Constellation, LLC and Intelsat Holdings, Ltd., Application for Transfer of Control of PanAmSat Licensee Corp.***, Memorandum Opinion and Order, 21 FCC Rcd **7368,7375 ¶¶ 31-32** (2006) **(*"Intelsat-PanAmSat Order").***

[48] Any individual proceeding in which the Commission defines relevant product and geographic markets, such as an application for approval of a license transfer or a rulemaking with respect to the Commission's ownership rules, may present facts pointing to narrower or broader markets than any used, suggested, or implied in this Report. We note that markets can evolve and change over time.

- SDARS
- International
  - Wholesale Services
    - Capacity for Video Contribution
    - Capacity for Video Distribution
    - Network Services

26. In this Report, we do not include two retail markets with satellite-based participants because they are analyzed elsewhere in annual competition reports provided by the Commission to Congress.[49] Satellite-based MVPD providers are part of the broader MVPD market that is analyzed in the Commission's annual video competition report. Similarly, mobile satellite services providers are participants in the broader CMRS market that is discussed in Commission's annual CMRS competition report.

27. We emphasize that the market descriptions included in this Report are intended to facilitate discussion of satellite markets and services as required by section 703, and may not reflect the appropriate markets to be considered in other Commission proceedings, including merger reviews, rulemakings involving the Commission's ownership rules, or other reports to Congress.

2. The Relevant Market and Market Participant Concepts

28. Relevant Market. Describing the "relevant market," a concept drawn from antitrust law, is the first step in assessing whether "effective competition"[50] or market power exists in a market."[51] A relevant market has both product and geographic dimensions. When a relevant market has been described in both dimensions, market participants can be identified. Then, the participants' economic significance in the market can be measured and the presence of competition determined.

29. In this Report, we draw on the relevant market concept to identify the product and geographic markets in which providers of satellite communications services compete with each other and with service providers that use non-satellite technologies. In describing relevant markets, we rely on antitrust law, economic theory, and the U.S. Department of Justice and Federal Trade Commission *Horizontal Merger Guidelines ("Merger Guidelines").*[52] Although this Report is not an analysis of a proposed merger, the *Merger Guidelines* provide useful principles for the analysis of competition in satellite communications markets.

30. Antitrust case law and economic theory describe the relevant product market by examining whether most consumers of a given product or service consider that there are close substitutes for the product or service, and whether there are other services that are reasonably interchangeable, even if not identical, for the same purposes.[53] The *Merger Guidelines* describe a product market as the smallest

---

[49] *See supra* notes 8, 9

[50] 47 U.S.C. § 703(b)(2)

[51] Market or monopoly power has been defined as the power to force a purchaser to do something that he would not do in a competitive market, *Eastman Kodak Co. v. Image Technical Services, Inc.*, 504 U.S. 451, 464 (1992), the ability to raise prices above those that would be charged in a competitive market, *Jefferson Parish Hospital Dist. No. 2 v. Hyde*, 466 U.S. 2, 27 n.46 (1984), the ability of a single seller to raise price and restrict output, *Fortner Enterprises, Inc. v. U.S. Steel Corp.*, 394 U.S. 495, 503 (1969), and the power to control market prices or exclude competition, *United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377, 391 (1956).

[52] U.S. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines, 57 Fed. Reg. 41552 (dated Apr. 2, 1992, revised, Apr. 8, 1997) ("Merger Guidelines").

[53] *International Boxing Club of New York, Inc. v. United States*, 358 U.S. 242, 249 (1959), *citing United States v. E.*

(continued....)

group of competing services for which a hypothetical monopoly provider would profitably impose at least a small but significant and non-transitory price increase, presuming no change in the terms of sale of other services.[54] Both descriptions consider the availability of substitutes that would enable a customer to defeat an attempted increase in price or lowering in quality by a firm in the market.

31. The *Merger Guidelines* describe a geographic market as the area within which a hypothetical monopolist would profitably impose at least a small but significant and non-transitory increase in price, holding constant the terms of sale for all services produced elsewhere?' Antitrust precedent describes a geographic market similarly, as the area of effective competition, the area within which buyers can practically turn for alternative sources of supply, or the area in which there are sellers who could act io restrain the prices charged to those buyers.[56] The geographic market for a satellite communications service – the geographic area within which buyers can turn for alternative sources of supply – may be greater than nationwide because buyers may consider purchasing services on any satellite that can reach their particular geographic market within the United States, regardless of its ownership or physical location in space.

32. Market Participants. Once a relevant market is described, the next step is to identify the firms that participate in the market. According to the *Merger Guidelines,* market participants "include firms currently producing or selling the market's products in the market's geographic area."" Market participants can be large or small. A firm that has not yet entered the market and does not exercise a constraining influence on firms that are in the market is not a market participant. A firm that has not yet entered may be considered a market participant, however, if its entry is shown to be certain and significant or to influence the behavior of the firms that are currently producing or selling.[58]

(Continued from previous page) ———————————

I. Du pont De Nemours & Co., 351 U.S. 371, 395 (1956) (in describing the relevant product market in Sherman Act cases, "no more definite rule can be declared than that commodities reasonably interchangeable by consumers for the same purposes make up that 'pan of the trade or commerce;' monopolization of which may be illegal."). *See also Eastman Kodak Co. v. Image Technical Services, Inc.*, 504 U.S. 451,481-82 (1992) ("The relevant market for antitrust purposes is determined by the choices available to [consumers]."); *National Collegiate Athletic Ass'n v. Board of Regents of the University of Oklahoma*, 468 U.S.85, 95 (1984) ("The District Court defined the relevant market as 'live college football television' because it found that alternative programming has a significantly different and lesser audience appeal."); *United States v. Microsoft*, 253 F.3d 34, 52 (D.C. Cir. 2001), *cert. denied,* 534 U.S. 952 (2001) (in determining reasonable substitutes, the court excluded "middleware" software from the description of the relevant product market because of its present non-interchangeability with Windows notwithstanding its long-term future potential).

[54] Merger Guidelines §§ 1.11, 1.12,

[55] *Id.* § 1.21

[56] *United States v. Philadelphia Nat'l Bank*, 314 U.S. 321,359 (1963); *Tampa Elec. Co. v. Nashville Coal Co.*, 365 U.S 320,327 (1961); *Spirit Air Lines, Inc. v. Northwest Airlines, Inc.*, 431 F.3d 917,932-33 (6" Cir. 2005).

[57] *Id.* §§ 1.0, 1.31.

[58] In our reviews of several previous mergers of major incumbent LECs, our competitive analysis focused on the likelihood that one would enter the other's territory and add to competition there, and on the reduction of competition that the proposed merger would cause. *See, e.g., NYNEX Corp. & Bell Atlantic Corp.*, Memorandum Opinion and Order, 12 FCC Rcd 19985, 19990-91 ¶ 8,20025-28 ¶¶ 73-78 (1997). Our analysis of another major merger considered the certainty of entry by broadband PCS carriers affecting the behavior of existing cellular carriers. *Craig O McCaw & AT&T*, Memorandum Opinion and Order, 9 FCC Rcd 5836,5863,140 (1994), *aff'd, SBC Communications, Inc. v. FCC*, 56 F.3d 1484, 1492 (D.C. Cir. 1995).

3. Introduction to Relevant Markets

33. In this Report, we examine competition in domestic and international relevant markets for satellite communications services. Each relevant market described in this Report is a service that uses a communications satellite as a platform. We examine several relevant markets, including "wholesale" (in which the product is capacity, an input to a service provided to business or retail consumers) and "retail" (in which the product is a service provided to consumers).[59] In some cases, we address a grouping of similar. smaller relevant markets together for analytical simplicity.

34. After we describe each relevant market, we identify or describe the "market participants," the firms that currently sell (or, in the case of most satellite communications services, provide service) in it.[60] In some cases, several firms own different components of a service – a communications satellite spacecraft, transmitting and/or receiving earth station(s), the other components of a communications service (*e.g.*, software, program content) and radio frequency licenses. In each such case, we list as the market participant the firm that controls the asset(s) that are most significant in providing the service. In many cases. this will be the owner of the communications satellite spacecraft. In some cases, however, the market participant we list may lease significant long-term capacity from the satellite owner in order to provide a value added or satellite networking service to customers. In those cases, we consider the latter company to be more significant and we list it as the market participant.

35. The relevant markets described in this Report may include market participants that use technology platforms other than communications satellites to provide services that compete with satellite providers. Recognizing intermodal competition is consistent with customary descriptions of relevant markets. Satellite technology is one technology platform, an input that can be used to provide a communications service. It is not uncommon for the same service – the same communications capability that a consumer uses – to be provided by differing platforms such as satellite. radio transmitters on the earth's surface ("terrestrial wireless"). and/or wires (copper, coaxial, or fiber optic). These different technologies afford consumers substantially the same capability. A provider of each of those services may have a constraining effect on the pricing and output of a provider of any of the others. The extent to which a terrestrial provider may compete with satellite-based providers, however, may be constrained by the geographic extent of its network, especially compared to the relatively large geographic coverage of satellites.

4. Domestic Relevant Markets and Market Participants

36. We describe three wholesale product markets, each consisting of communications capacity that is provided to business and government users within the United States for their further provision to end users, and two retail product markets, each consisting of communications services

---

[59] For a similar differentiation of wholesale and retail satellite communications markets, see *Intelsat-PanAmSat Order,* 21 FCC Rcd at 7375, ¶ 31 ("it is useful to contrast the nature of competitive rivalry in *retail* satellite service markets, where customers are ordinary consumers buying, for example, multi-channel video programming services, and *wholesale* satellite service markets, where customers are business entities buying video transmission services by satellite for either contribution or distribution purposes.") (emphasis in original).

[60] Merger Guidelines § 1.31. Sellers in a market may also include "uncommitted entrants" – firms not currently producing or selling the relevant product in the relevant area who would likely enter the market within one year and without the expenditure of significant sunk costs of entry and exit, in response to a small but significant and nontransitory price increase, *Id.* at § 1.32. Neither the comments herein nor our own analyses have identified any uncommitted entrants. In general; entry into the markets discussed herein, even if it required only new earth stations or other terminal equipment, would entail significant sunk costs. *See* MSV Comments at 6. Entry entailing new radio licenses and satellites would entail such costs and also take more than one year.

provided directly to retail consumers (mostly individuals and households) within the United States.[61] These product markets are listed in Table 1. For each product market we discuss its market description and the market participants. We then discuss the geographic aspects of these three wholesale product markets.

[61] Unless otherwise specifically noted, the "United States" in this Report includes Alaska and Hawaii.

Wholesale Services	Capacity for Video Contribution Capacity for Video Distribution Network Services
Retail Services	Fixed Satellite Broadband Services Satellite Digital Audio Radio Services (SDARS)

networks[63]

[62] This relevant market is comparable to what, in the *Intelsat-PanAmSat Order,* we described as "video contribution (transmission of news, sports, and other video programming from various locations to central video production studios), and occasional use video (short-term satellite services provided lo broadcasters and others for coverage of sporting events, special events and breaking news)." *Intelsat-PanAmSat Order,* 21 FCC Rcd at 7376, ¶ 35.

[63] We define "broadcast" for this Report as referring to "over-the-air" television stations using **VHF** and UHF radio spectrum, or, over-the-air radio stations using ***AM*** and **FM** spectrum. We define "broadcast network," for this Report, as an organization that offers programs for transmission to affiliated broadcast stations for a substantial number of hours per week. See 47 U.S.C. §§ 73.3613(a)(1), 74.2, 76.55(f).

[fd] We define "syndicator" for this Report as a person, other than a network, who obtains rights to **a** program or group of programs and makes them available to **MVPDs** or broadcast stations for transmission to the latters' consumers.

[65] We define "local exchange carrier" or "LEC" for purposes of this Report as any person that is engaged in the provision of telecommunications service for a fee within a telephone exchange or its equivalent, or in the offering of access to an exchange for the purpose of the origination or termination of telephone toll services between stations in different exchange areas for which there is made a separate charge. See 47 U.S.C. §§ 153(16), (26), (47)-(48).

39. Market Particiuants. Satellite-based participants in these video contribution markets are FSS satellite operators, including Intelsat, Ltd. ("Intelsat," which recently merged with PanAmSat), Loral Space & Communications, Ltd. ("Loral"), and SES Americom, Inc. ("SES Americorn"), teleports,[66] resellers and other specialized program providers engaged in occasional use for satellite news gathering.[67] EchoStar recently announced its entry into this market, providing news organizations ABC and CBS with capacity for election coverage.[68] Additional participants are large media entities, such as CBS, which self-supply some capacity. Also, on certain specific routes, terrestrial providers of communications transmission services are participants in this market.[69] The most prominent such providers are Level 3 Communications, Inc., AT&T Corp., and Verizon Communications Inc. Terrestrial distribution is available only from sites where terrestrial facilities (*e.g.,* wire, coaxial, fiber) are installed. Satellite distribution, in contrast, is potentially available to and from any point within the coverage area of a satellite.

40. Finally, all foreign-licensed FSS operators listed on the Commission's Permitted Space Station or "ALSAT" list[70] are market participants in this and other wholesale relevant markets described in this Report. As with all satellite technology, however, their ability to participate fully in this or other domestic markets may be limited by their spacecraft's geographic coverage.

(ii) Capacity for Video Distribution

41. Product Market. We describe this group of product markets to consist of capacity for the wholesale distribution of media content between points within in the United States. These "video distribution" markets consist of point-to-multipoint transmission of entertainment and news content, for example, from broadcast networks and syndicators to individual broadcast stations; from the hub locations of MVPDs and MVPD networks" to individual MVPD headends;[72] and from over-the-air broadcast stations over long distances to MVPD headends,[73] all for subsequent distribution to consumers (*i.e.,* viewers and listeners).[74] Customers in this grouping of markets are the same as in the above-

[66] A teleport is a large accumulation of connections lo terrestrial facilities, earth stations and related equipment. and access to satellites that meet the high-volume needs of one or more consumers of satellite communications services. Some large enterprises operate their own teleports; some satellite owners operate teleports; and there are stand-alone teleport operators. The latter two kinds of operation serve groups of satellite consumers, no one of which needs enough capacity to create its own teleport. See Newton Telecom Dictionary 851 (16" ed. 2000).

[67] For simplicity, we usually name as market participants the parent companies in corporate structures, although a subsidiary may provide the service discussed.

[68] *Satellite*, Communications Daily at 12 (Nov. 24,2006).

[69] SIA Comments at 9 n.23 (paraphrasing CNN executive that about one half of CNN's domestic news feeds arrive at its Atlanta headquarters over fiber optic terrestrial video paths).

[70] *Permitted Space Station List*, available at http://www.fcc.gov/ib/sd/se/permitted.html (visited July 12, 2006).

[71] We define an "MVPD network," for purposes of this Report, as a stream of video content provided by its owner to an MVPD for transmission to the MVPD's retail consumers. Examples of MVPD networks would include CNN and ESPN.

[72] A headend is the central location of a cable TV system from which channels of video programming are sent via cable to the system's consumers. See Newton Telecom Dictionary 400 (16th ed. 2000).

[73] When a broadcast station's transmitter is close enough to an MVPD headend for the latter to receive the former's signal by radio and a simple antenna, in the same way viewers at home receive it, that medium may be used.

[74] This relevant market is comparable to what, in the *Intelsat-PanAmSat* Order, we described as "video distribution (transmission of programming to broadcasters, cable systems and other redistribution systems)." *Intelsat-PanAmSat* Order, 21 FCC Rcd at 7376, ¶ 35.

described markets for Video Contribution.

42. Market Participants. Satellite-based participants in this group of product markets are FSS satellite operators, including Intelsat, Loral, and SES Americom,[75] as well as EchoStar Satellite, L.L.C. ("EchoStar").[76] Market participants also include some local and regional teleports such as Crawford Communications, Inc., and Ascent Media Group. Also participating in this market are the large media entities mentioned in paragraph 39 above, and, on a few routes, the terrestrial communications companies referred to in paragraph 39 above. Other potential participants are all foreign-licensed satellite operators listed on the Commission's ALSAT list.[77]

(iii) Network Services

43. Product Market. We describe this group of product markets as consisting of the provision of point-to-point telecommunications transmission paths to telecommunications operators and corporate users. This group has two major components.

44. The first component consists of "backbone" satellite capacity used for point-to-point trunking for voice, data, or Internet traffic, for backhaul[78] of communications services, and for redundancy and restoration of communications services when the primary cable and terrestrial wireless technologies fail.[79] This service includes backbone capacity to Alaska, Hawaii, and tribal territories. Users of this capacity include facilities-based communications carriers (both wireline and wireless), paging service providers, business corporations, and parts of the United States government (both military and nonmilitary).

45. The participants in this component of the network services product market include FSS satellite operators such as Intelsat, Loral, and SES Americom; some teleport operators;" all foreign-licensed satellite operators listed on the ALSAT list;[81] and resellers of satellite capacity. Terrestrial wireline and wireless carriers also offer capacity for telecommunications backbone where they have network facilities. In addition, some carriers and government users may supply themselves with capacity for telecommunications backbone.

46. Other participants in this component of the network services market are "network integrators," which are companies that supply their retail customers with network services. Network

[75] DirecTV Comments at 21 *(citing NRTC to Market SES Americom's IP-PRIME*, Press Release, available at http://www.nrtc.coop/export/main/news_policy/pdfreleases/2005_Press_Releases/NRTC_SES_final_final_release.pdf (visited Sept. 11, 2006)).

[76] EchoStar Comments at 6.

[77] ***See supra*** note 70.

[78] For purposes of this Report, we define "backhaul" as transmitting from a remote site or network to a central or main site, usually over a high capacity line and for purposes of efficient management. See, ***e.g.***, PC Magazine, ***Encyclopedia,*** http://www.pcmag.com/encyclopedia_term/0,2542,t= backhaul&i=38356,00.asp (visited Oct. 23, 2006).

[79] This relevant market is comparable to what, in the ***Intelsat-PanAmSat Order,*** we described as "voice and data applications provided to telecommunications carriers (mostly point-to-point transmission between telecommunications hubs), . . . and Internet applications (including satellite capacity for Internet Protocol trunking and direct Internet access broadband connectivity)." ***Intelsat-PanAmSat Order,*** 21 FCC Rcd at 7378, ¶ 41.

[80] Major teleport operators include Intelsat, SES Americom, Stratos, Loral, Globecomm, CapRock, and Ascent. World Teleport Ass'n, ***Global Top Twenty of 2006,*** http://www.worldteleport.org/displaycommon.cfm?an=1&subarticlenbr=301 (visited Oct. 3,2006).

[81] See ***supra*** note 70.

integrators make use of a variety of communications platforms (or combination thereof), including both satellites and terrestrial wireline and wireless. These satellite applications may use existing teleports or build dedicated on-site earth stations called Very Small Aperture Terminals ("VSATs") and arrange with licensees and satellite owners for the remaining service inputs.[82]

47. The second component of the network services market consists of other fixed communications services between points within the United States. These services include the provision of both point-to-point and point-to-multipoint networks, and many kinds of specialized voice and data services for communicating within the United States between business enterprise hub locations and their many remote locations.[83] Subscribers to these services, unlike subscribers to the backbone services just described, often require the service provider to furnish receiving stations, ground integration, network integration, and other management services.

48. Corporate communications networks often use such fixed satellite-based services to reach widely dispersed locations or remote locations that do not have access to wireline facilities. Examples would include retail chains communicating with stores dispersed throughout the US; gas stations needing point-of-sale credit verification at rural crossroads; and communications networks established for remote work sites or places preparing for or struck by natural disasters.[84] Some of these fixed communications services have sporadic or uneven traffic patterns, such as those used for periodic inventory management and other tracking; digital signage; operation of automatic teller machines; other banking and financial services; credit card verification, and other short exchanges of data. Other fixed communications services provided by satellite have relatively steady traffic patterns, such as corporate communications networks for telephony, data, and Internet connectivity, or corporate television and radio services. Services in this product market can be IP-based or not, and symmetrical or asymmetrical. Most are narrowband, but some, such as corporate television, may be broadband. Customers in these markets are a wide range of business enterprises in many industries, parts of the United States government, and network integrators.

49. The satellite-based participants in this component of the network services market group include the FSS satellite operators Intelsat, Loral and SES Americom, which offer to enterprise and government customers both turn-key network services, and alternatively, wholesale satellite capacity that customers can use to meet their needs themselves. Other potential participants include all foreign-licensed FSS satellite operators listed on the ALSAT list.[85]

50. In addition, several VSAT companies, including Hughes Network Systems, LLC ("Hughes"); iDirect, Inc.; Gilat Satellite Networks Ltd. (including its U.S. subsidiary, Spacenet, Inc., hereinafter "Gilat"); and ViaSat, Inc., are participants in these markets.[86] Additional satellite-based participants include teleport operators which may offer connectivity for specialized enterprise or government networks. Terrestrial participants include providers of transmission via wire named in paragraph 39 above. Some military users and large enterprises (for example, the oilfield services

[82] Some VSAT companies also own one or more central or hub earth stations that manage communications between a satellite and a VSAT.

[83] This relevant market is comparable to what, in the *Intelsat-PanAmSat Order,* we described as "corporate network applications (including point-to-point and point-to-multipoint traffic for one- and two-way communications among multiple business sites)." *Intelsat-PanAmSat Order,* 21 FCC Rcd at 7378, ¶ 41.

[84] Adrianne Kroepsch, *FSS Operators Preparing for Hurricane Season,* Communications Daily at 12 (June 2, 2006).

[85] *See supra* note 70.

[86] *See generally Global VSAT Forum,* available at http://www.gvf.org/ (visited Oct. 4, 2006). Some of these VSAT companies are network integrators and others also manufacture some or all of the requisite network equipment. *Id.*

provider, Schlumberger Limited, and Dow Jones & Company) self-supply some of their own fixed communications needs by satellite.

(iv) Geographic Markets for Wholesale Domestic Services

51. The *Merger Guidelines* describe the geographic market for a service as the area within which a hypothetical monopolist would profitably impose at least a small but significant and non-transitory price increase, or the area within which buyers can practically turn for alternative sources of supply?' The wholesale media markets described above include news sources, broadcast stations, and cable headends located throughout the United States. In addition, many major customers of wholesale telecommunications have business locations across the United States and require access to other points in the country, such as credit card data banks and suppliers. Accordingly, the geographic extent of the contribution and distribution product market groups described above is national?' The geographic extent of the network services market group is regional.

b. Domestic Retail Markets

(i) Fixed Satellite Broadband Service

52. Product Market. For the purpose of this report, we describe this product market to consist of point-to-point high-speed or broadband fixed satellite Internet access service provided directly to retail customers within the United States for a fee.[89] Customers in these markets include the tens of millions of American residential and small office/home office ("SOHO") customers in rural and remote locations where terrestrial-based broadband has not been deployed?'

53. Geographic Markets. We describe the geographic dimension of these markets to be local to the extent that most consumers of this product are individual households or small businesses seeking broadband connectivity by whatever technological means available. Although satellite-based broadband providers tend to provide these services nationwide, terrestrial broadband providers such as cable TV companies and LECs remain the largest class of providers of this service in the United States. While many larger fixed broadband providers operate in many or all areas of the nation and offer similar data rates and terms to consumers nationwide, the mix of broadband providers available to any given consumer differs by locality." According to the Commission's July 2006 report titled "High Speed Services for Internet Access: Status as of December 31, 2005," satellite technologies served at least one

[87] *See supra* ¶ 30.

[88] Satellite technology allows for provision of services throughout wide geographic areas, although the amount and power of wholesale satellite capacity may vary from location to location. For example, due to their geographic separation from the 48 contiguous United States, satellite providers may need to add capacity in order to provide comparable services to Alaska and Hawaii.

[89] In this Report, we define "high-speed" or "broadband" as affording a bit rate of 200 kbps or more in at least one direction. *See* FCC, High-speed Services for Internet Access: Status as of December 31,2005, n.1 (rel. July 26, 2006) *("High-Speed Services for Internet Access: 2005 Status Report"),* available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-266596A1.pdf (visited Oct. 30,2006). This report and previous releases of the High-Speed Services for Internet Access report are available at http://www.fcc.gov/wcb/iatdkomp.html.

[90] Terrestrial-based broadband service, where it is available, offers higher bit-rates at lower prices than satellite-based broadband service. *See High-speed Services for Internet Access: 2005 Status Report* at 11. Therefore, for the purposes of this Report, we do not generally consider satellite-delivered broadband to be competitive with terrestrial-based broadband where the latter is available.

[91] Satellite-based broadband providers may also offer varying speeds or require different consumer ground equipment for certain locations, depending on coverage and power levels available. *See, e.g., Starband: Frequently Asked Questions,* available at http://www.starband.codfaqs/index.asp (visited Oct. 27,2006).

customer in 88% of U.S. zip codes, making it the most widely available technology for broadband in the U.S.[92]

54. *Market Participants.* The participants in these markets are several providers of broadband service utilizing FSS satellites: WildBlue Communications, Inc.,[93] Hughes, and Gilat (which offers Starband Service)." Additionally, one mobile satellite services operator, Inmarsat, Inc. ("Inmarsat"), through its resellers, offers fixed broadband service throughout the United States, including Alaska and Hawaii.[95] Another company, atContact Communications, LLC, intends to offer broadband services globally using both FSS and satellites in Highly Elliptical Orbit after launch of its spacecraft.[96]

(ii) Satellite Digital Audio Radio Services (SDARS)

55. Product Market. For the purpose of this Report, we describe this product market to consist of satellite audio programming provided to persons within the United States for a fee. The most prominent of these services is SDARS.

56. Geographic Markets. We find the geographic aspects of this market to be national. Individual customers face the same nationwide-licensed choices throughout the 48 contiguous states. Although each user is in one locality, the major participants in the market serve the entire country with mostly the same content.

57. Market Participants. The participants in this market are the two SDARS providers, XM and Sinus. XM is also expanding its focus through trial arrangements with several airlines.

5. International Relevant Markets

58. This Report examines those international markets that provide communications or other satellite-delivered services between a point in the United States and a point outside the United States.[97] Although an examination of competition in markets for satellite-delivered services entirely removed from the United States is beyond the scope of this Report, we will, as directed by Congress, examine barriers to U.S. satellite providers in such markets.[98]

---

[92] ***High-speed Services for Internet Access: 2005 Status Report,*** at 4.

[93] DBS providers DirecTV and EchoStar have agreed to distribute WildBlue's broadband service to their customers. ***Satellite,*** Communications Daily at 15 (Oct. 23, 2006); ***DirecTV, EchoStar to offer WildBlue high-speed Internet,*** Los Angeles Business, available at http://www.bizjournals.com/losangeles/stories/2006/06/05/daily57.html (visited lune 14, 2006). In some rural areas where AT&T is the incumbent LEC, it is marketing WildBlue's service. News Release, ***AT&T Initiatives Expand Availability of Advanced Communications Technologies,*** at 2 (May 8, 2006).

[94] Who ***Is Starband?,*** available at http://www.starband.codwhatis/index.asp (visited June 15, 2006); ***Gilat Boundless Communications***, available at http://www.gilat.com/Solutions_BroadBandIP.asp (visited June 15, 2006).

[95] ***Seventh ORBIT Report,*** 21 FCC Rcd at 6749 (2006)

[95] ***Broadbandfor a Mobile Planet,*** http://broadband.inmrsat.com/ (visited Dec. 28, 2006).

[96] ***ContactMEO Communications, LLC,*** Order and Authorization, 21 FCC Rcd 4035 (2006)

[97] In determining the scope of this Report, we look to the Act, which on its terms applies to "all interstate and foreign communication by wire or radio and all interstate and foreign transmission of energy by radio, which originates and/or is received within the United States." 47 USC § 152(a). The Act further defines "foreign communication" to mean "communication . . . from or to any place in the United States to or from a foreign country, or between a station in the United States and a mobile station located outside the United States." 47 USC § 153(17). See ***In the Matter of International Settlement Rates,*** Report and Order, 12 FCC Rcd 19806, 19934, ¶ 278 (1997).

[98] ***See infra*** § III.E.5.

Wholesale Services	Capacity for Video Contribution Capacity for Video Distribution Network Services

60. Usually, product markets for international communications services are described on a route-by-route basis (*e.g.*, U.S.-to-Germany, U.S.-to-Poland).[99] This approach applies equally to the transmission of telecommunications and media content. For example, one international "capacity for video contribution" market would include FSS transmission of video content from the a news event in South Africa to the network hub of a television news organization located in the United States, or the transmission of video from a sporting event in the United States to the headquarters of a broadcaster in Japan. In the network services markets, international telecommunications carriers procure backbone capacity to meet the same point-to-point and point-to-multipoint needs as domestic carriers. Finally, many subscribers need fixed and mobile communications network services between the United States and foreign countries of the same kinds that domestic subscribers need. In some cases, satellite technologies may provide the only connectivity available for certain services or on certain routes.

61. Route-by-route analysis may seem to disregard satellite technology's ability to cover broad areas. Often, however, the decisive fact in describing international product markets is the legal and regulatory policies of each foreign government, not only the coverage area of its satellite or network. Nations differ significantly in their policies for "landing" international communications services, whether via terrestrial wireline connections or satellite receiving stations."' It is not unusual for a satellite-based service of one or more providers to be technically available in many countries, but for commercial availability of the service to differ among adjacent countries based on legal or regulatory policies.

62. Notwithstanding these potential differences, we will limit our discussion of these international markets in this part of this Report to the above descriptions. We provide only general analysis of competition in these international satellite markets. We believe that this analysis, in conjunction with our list of countries potentially raising bamers to entry by U.S. satellite providers,

[99] ***See, e.g., International Bureau Revises and Reissues the Commission's List of Foreign Telecommunications Carriers That Are Presumed to Possess Market Power in Foreign Telecommunications Markets,*** Press Release, 19 FCC Rcd **20385,20386** (2004) ('The Commission'srules include a presumption that a foreign carrier does not possess market power on the foreign end of a U.S. international route if it possesses less than 50 percent market share in each of three relevant foreign product markets"); ***Lockheed Martin Corp. and Intelsat, Ltd.,*** Order and Authorization, **17** FC Rcd 27732, 27741-43, ¶¶ **15-17 (2002).**

[100] ***See infra*** § III.E.5 and Appendix **B** to this Report.

provides information indicative of the level of competition in the provision of international satellite services.[101]

63. Geographic Markets. Most of the customers in the U.S. for international telecommunications or media services, like those of the wholesale services described above, are businesses and institutions that require communications connectivity among multiple locations around the globe or must link remote locations in the U.S. and a specific country or countries. The major participants in these markets are the service providers that market within all 50 U.S. states, but whose satellites may have regional or global coverage capability. The geographic aspects of those service offerings are therefore national.

D. Market Concentration

64. One measure of competition in a market is the actual number and size of firms participating in that market. Market concentration fluctuates with financial transactions such as mergers, acquisitions, bankruptcies, and restructuring. This Section reviews such transactions in the satellite communications sector since 2000. We then analyze data about market shares for some relevant markets and other market concentration measures, in order to contribute to our overall conclusion about competition in satellite communications markets.

1. Mergers and Other Transactions in Commercial Satellite Markets Since 2000

65. This Section describes recent organizational changes that have occurred in the U.S. commercial satellite services industry. These changes include company mergers and acquisitions, privatizations and public offerings, joint ventures, divestitures and other split-offs, bankruptcy reorganizations, and new entry. Mergers and acquisitions can eliminate a market participant and, at the same time, create a more competitive post-merger firm if the depth and breadth of its services are greater than before the merger. Other transactions, such as divestitures, split-offs, and new entry can create new market participants and add to the competitiveness of markets. The descriptions of organizational structure in this Section focus on the entities that own and operate satellite platforms, along with other facilities, and not on resellers or other service providers that might also be participants in a relevant market analysis.

66. The FSS sector is in the above-named wholesale markets, including Capacity for Video Contribution, Capacity for Video Distribution, and Network Services, as well in the retail market of Fixed Wireless Broadband Service. The sector's first three decades were shaped by mergers, acquisitions, and other transactions. For example, when the Commission removed barriers to providing both international and domestic services in 1996, it observed that the number of commercial entities providing domestic satellite services had declined from six in 1985 to three in 1996.[102] In 1997 and 1998, respectively, Loral Space and Communications, a new company formed in 1996, acquired AT&T Skynet and Orion Network Services.'" In 1997, PanAmSat acquired the Galaxy fleet of satellites from Hughes.[104] During the period

[101] The resources necessary to describe geographic markets for several services and perhaps two hundred countries would, in our opinion, go beyond the scope of what Congress intended for this Report. See *infra* § III.E.5 and Appendix B for several illustrative examples of varying legal and regulatory policies that might obstruct commercial availability of satellite services.

[102] ***DISCO 1 Order,*** 11 FCC Rcd at 2431, ¶ 11. ***See also 1988 Orbit Assignment Order,*** 3 FCC Rcd at 6973, ¶ 8 & n.30 (eleven companies assigned C- and Ku-hand FSS orbital locations for 42 satellites); ***Assignment of Orbital Locations to Space Stations in the Domestic Fixed-Satellite Service,*** Order and Authorization, 11 FCC Rcd 13788, 13793, ¶ 9 & n.12 (1996) (eight companies assigned orbital locations for 44 satellites).

[103] ***AT&T Corp., Assignor, and Loral SpaceCom Corporation, Assignee, For Authority to Assign the Licenses for Telstars 302, 303, 401, 402R, 5, and 6, and Associated Earth Station and Common Carrier Authorizations,*** Order (continued....)

of 2000-2006, the sector experienced a series of mergers and acquisitions, including: (1) GE Americom's acquisition of Columbia Communications Corporation, which combined a predominantly domestic FSS provider with a predominantly international FSS provider (2000); (2) SES Global's acquisition of GE Americom and Columbia Communications Corporation, giving SES Global entry into U.S. markets (2001); (3) Intelsat's acquisition of Loral's North American satellites, providing Intelsat entry into the U.S. video distribution market (2004); (4) the split-off and divestiture of Hughes and its subsidiaries by General Motors, followed by the merger and acquisition of a controlling interest in Hughes by The News Corporation Limited (2004); (5) the private equity fund acquisitions of PanAmSat (2004) and Intelsat (2005); and (6) the recent acquisitions of New Skies by SES Global (2006), and of PanAmSat by Intelsat and the announced purchase of Telesat Canada by Loral Skynet (2006).

67. With regard to SDARS, in 2003, the Commission approved the restructuring of SDARS provider Sirius by granting authority to Sirius Satellite Radio Inc. to transfer control of its SDARS space station license to Sirius' creditors, none of which individually would have a controlling interest.[105]

2. Measures of Market Concentration

68. In this Section, we analyze data indicating market structure and ownership in wholesale and retail markets that include satellite services. We first discuss relevant measures of market concentration and then use these measures to examine the extent of market concentration in retail and wholesale markets for satellite services.

69. Measures of Market Concentration. There are various ways of measuring market concentration and the appropriate measure is generally dictated by the economic theory that best fits the behavior of the firms in the relevant market. The Herfindahl-Hirschman Index ("HI") is a measure of concentration that takes into consideration the distribution of the size of firms in the market. HHI can measure to some extent whether one firm in a market has market power or whether conditions are conducive to collusion.[106] The HHI is used by courts, the Commission, and is included in the ***Merger Guidelines*** as a preliminary screening test to detect market power in relevant markets.'"

70. The HHI measures concentration in a market by calculating the market share of each

(Continued from previous page)

and Authorization, 12 FCC Rcd 925 (1997); ***Loral Space and Communications Ltd. and Orion Network Systems, Inc. International Private Satellite Partners, L.P. d/b/a Orion Atlantic, L.P., Application far the Transfer of Control of Various Space Station, Earth Station, and Section 214 Authorizations,*** Order and Authorization, 12 FCC Rcd 4592 (1998).

[104] ***Hughes Communications, Inc. and Affiliated Companies and Anselmo Group Voting Trust/PanAmSat Licensee Corp. and Affiliated Companies, Application for Transfer of Control and/or Assignment of Various Space Station. Earth Station, and Section 214 Authorizations,*** Order and Authorization, 12 FCC Rcd 7534 (1997) (transferring control of PanAmSat to Hughes, assigning certain Hughes licenses to PanAmSat, and transfemng control of certain Hughes subsidiaries to the new PanAmSat).

[105] ***Sirius Satellite Radio Inc., Application for Transfer of Control of Station Authorization,*** Order, 18 FCC Rcd 215 (2003).

[106] Coumot-Nash behavior occurs where firms maximize their profit by setting output, taking their rival's output as a given. Keith Cowling & Michael Waterson, "Price-Cost Margins and Market Structure," *Economica,* 43 (Aug. 1976), 264-274. The HHI can be used to detect cheating on collusive agreements. George J. Stigler, "A Theory of Oligopoly," *J. Pol. Econ.* 72 (1964) 44-61.

[107] ***See, e.g., Synthroid Marketing Litigation,*** 325 F.3d 974 (7th Cir. 2003); ***FTC v. H.J. Heinz Co.,*** 246 F.3d 708,716 (D.C. Cir. 2001); ***Twelfth MVPD Competition Report,*** 21 FCC Rcd at 2573-74, ¶ 153. The Merger Guidelines advocate the use of post-merger HHI and change in HHI due to merger as factors to consider when challenging a merger as being anticompetitive. Merger Guidelines § 1.5.

market participant, squaring each market share, and adding the resulting sums. A market's HHI varies with the number of firms and the degree of inequality among firm size. Generally, the HHI increases as there are fewer and larger firms in the market. A market's *HHI* can range from nearly zero in the case of an atomistic market to 10,000(100 squared) in the case of a monopoly.

71. Generally, horizontal concentration in differentiated product markets (*i.e.*, markets with products that are differentiated in terms of location, brand, and quality) may lead to situations where a specific market outcome is not due to coordinated interactions among firms, but due to the action of a single firm."[108] When analyzing differentiated product markets, the HHI may not be useful in analyzing market performance.[109] Instead, unilateral actions may he analyzed using demand characteristics of the merging firms and the "diversion ratio" – a measure of the fraction of sales going to firms offering substitute products."[110] Since firm-specific demand characteristics such as own- and cross-demand elasticities"[111] and diversion ratios are theoretical concepts and are seldom calculated by individual firms, market shares are frequently used as a proxy for the diversion ratio.[112] To evaluate concentration in the wholesale satellite markets, we primarily rely upon market shares rather than HHIs, which may be misleading in markets with few players and those that establish price by negotiation."[113] For the retail

[108] More precisely, unilateral effects may arise in situations where firms sell products that substitute for each other, in varying degrees, so that any attempt by a single firm to raise price would fail because consumers would be able to switch to close substitutes. "A merger between two of these firms, however, may be profitable to the extent that the merger includes the firm to which enough of the customers switch. Since the price rise is initiated by a single firm, the competitive problem with such a merger is not coordinated behavior but rather is characterized as a 'unilateral effect."' See John E. Kwoka & Lawrence J. White, ***The Antitrust Revolution,*** Third Edition, (Oxford University Press, 1999), p. 17.

[109] ***See*** Lawrence J. White, "Horizontal Merger Antitrust Enforcement: Some Historical Perspectives, Some Current Observations," prepared for the Antitrust Modernization Commission's "Economist's Roundtable on Merger Enforcement," Jan. 2006; John E. Kwoka, "Some Thoughts on Concentration, Market Shares, and Merger Enforcement Policy," paper presented at the FTC/DOJ Workshop on Merger Enforcement, Feb. 2004; Gregory J. Werden & George A. Rozanski, "The Application of Section 7 to Differentiated Products Industries: The Market Definition Dilemma," Antitrust, 8 (Summer 1994), 40-43; but **see** Daniel L. Rubinfeld, "Testimony before the Antitrust Modernization Commission," Jan. 19, 2006, available at http://www.amc.gov/commission_hearings/pdf/rubinfeld_statement_final.pdf (visited Nov. **16,2006).**

See Federal Trade Commission & U.S. Department of Justice, ***Commentary on the Horizontal Merger Guidelines,*** March, 2006 at 27.

Demand elasticity measures the degree to which the quantity demanded for a product or service changes as some attribute of the product, such as price, changes. Own-price elasticity of demand measures the degree to which the quantity demanded of a product or service itself changes as its price changes – for example, the percentage reduction in the quantity of apples demanded in response to a percentage increase in the price of apples. Cross-price elasticity of demand measures the degree to which the demand for ***another*** product changes if the price of a product changes – for example, the percentage increase in the quantity of oranges demanded in response to a percentage increase in the price of apples.

[112] Kwoka notes,

> "To the extent that the market shares of the merging parties are related to the degree of competitive concern (as indicia of the diversion ratio, for example), that will also be reflected in higher measured concentration, other things equal, But the relationship between two firms' shares and overall concentration is loose, and in principle concentration itself– which reflects all firms' shares – is simply not the issue."

See Kwoka, ***supra*** note 108 at **4;** Robert D. Willig, "Merger Analysis, Industrial Organization Theory, and Merger Guidelines," Brookings Papers on Economic Activity, Microeconomics, (1991) 281-332.

[113] We note, for example, that in the recent merger between lntelsat and PanAmSat, the Commission considered the bargaining relationships between suppliers and sellers rather than calculating *HHIs* in analyzing the competitive

(continued....)

satellite markets, we calculate both market shares and HHIs.

72. Concentration in Wholesale Markets. Using the market descriptions described in Section III.C above, we differentiate the relevant product markets between wholesale and retail markets. We then apply the appropriate measures of market concentration to determine the extent of concentration in domestic wholesale and retail product markets related to satellite services.

73. Given the highly differentiated nature of wholesale services – including the unique attributes of satellite transponder capacity in terms of frequency, power, bandwidth and geographic coverage, as well as the extensive use of long term, individually negotiated contracts – it is likely that the relative bargaining power of the buyer and seller will determine the price paid by the buyer in this type of market. In the *Intelsat-PanAmSat* **Order,** the Commission observed that prices in the markets for wholesale satellite communications services are determined somewhat differently than in the markets for retail services. First, the services in wholesale satellite markets are substantially differentiated from one another by frequency band, transponder power, and geographic coverage. Second, a buyer's utilization of a particular satellite communications service in the wholesale market usually involves a long-term, ongoing business relationship with the communications satellite carrier, not a "one-shot" impersonal purchase of a standardized "commodity" type of service. In fact, the purchase of wholesale services usually involves extensive negotiations between the communications satellite carrier and the buyer.[114]

74. We lack the requisite data to determine specific market shares for the retail relevant markets described in paragraphs 52-57 above. We do consider market share in analyzing the competitive relationship between firms in the wholesale satellite services market. Market shares may be measured in several different ways using different criteria, including, for example, revenues, value of the product, or capacity utilization.

. 75. Capacity utilization by fixed satellite operators is dynamic, shifting with customers' actual usage of contracted capacity, conclusion of new contracts, and the launch or decommission of spacecraft. Table 3 provides a snapshot of fixed satellite transponder capacity as utilized by market participants in two domestic wholesale markets: (1) capacity used for video contribution and distribution; and (2) capacity used for network services. We note that Table 3 does not include data on capacity for video distribution and network services provided by other market participants, such as terrestrial providers or mobile satellite providers active in the network services markets. As a result, Table 3 does not constitute a complete analysis of market share. Because it does not include data on the capacity provided by other market participants, Table 3 most likely overstates each satellite operator's share of capacity. We also note that, because Futron's 2006 data were collected for the second quarter, it does not yet combine data for the subsequently merged entities of Intelsat and PanAmSat or of SES Americom and New Skies.

(Continued from previous page)
issues associated with the wholesale satellite markets identified in that proceeding. *Intelsat-PanAmSat* **Order,** 21 FCC Rcd at 7382-401, ¶¶ 25-64.

[114] Id. at 7374, ¶ 29

TABLE 3

SHARES OF UTILIZED TRANSPONDER CAPACITY BY TYPES OF DOMESTIC WHOLESALE SERVICES[115]

Operators	Video Contribution and Distribution[116]		Network Services[117]	
	2001	2006	2001	2006
Intelsat	5%	15%	9%	42%
PanAmSat	33%	29%	10%	13%
Loral Skynet	23%	3%	25%	3%
SES Americom	33%	34%	37%	25%
New Skies	n/a	3%	n/a	9%
Other	7%	15%	20%	9%

Source: Futron Corporation.

76. Table 3 shows that in 2006 three fixed satellite operators (Intelsat, PanAmSat, and SES Americom) provided a majority of satellite transponder capacity in the wholesale video contribution and distribution services markets and the wholesale network services markets. In the ***Intelsat-PanAmSat Order,*** the Commission determined that SES Americom, PanAmSat, and Intelsat have respectively 31%, 34%, and **15%** of transponder capacity sales for domestic network services.[118]

77. Globally, industry consulting firm Euroconsult reports that Intelsat/PanAmSat and SES Global/New Skies Satellite account for 50% of the revenues from wholesale satellite services in 2005. Moreover, according to Euroconsult, the top 10 operators in the wholesale market for satellite services accounted for 87% **of** total wholesale market revenues in 2005.[119]

78. Concentration in Retail Markets. Unlike the wholesale market where satellite operators, resellers, LECs, and VSAT and teleport operators, face a relatively small number of buyers, sellers in the retail market face thousands and even millions of individual consumers, households, and businesses as potential buyers. Customers in the retail market do not have an individualized relationship with sellers except for critical services such as billing. Moreover, in some retail markets, all customers pay the same price for the same service, except for specific differentiation due to subscribers' choice of service tiers, promotional offers, or certain specific customer **groupings.**[120]

---

[115] Percentages reflect the operators' proportion of capacity actually utilized for each service for the United States for the second quarter of each year noted.

[116] The numbers include domestic wholesale markets for capacity for video contribution and capacity for video distribution.

[117] The numbers include domestic wholesale markets for network services.

[118] ***Intelsat-PanAmSat Order,*** 21 FCC Rcd at 7389, ¶ 42.

[119] Euroconsult, ***Facts and Figures on the Performance of the Satellite Business Globally*** (June ***2006).***

[120] ***Intelsat-PanAmSat Order,*** 21 FCC Rcd at 7385, ¶ 31. Also, retail markets differ from wholesale markets in one additional aspect, the former is generally more vertically integrated than the later. For example, retail markets for **MVPD** services and **SDARS** and other mobile media services are generally vertically integrated markets where satellite operators also have ownership interests in video and audio content distributed **to** retail customers.