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Thomas B. Bacon

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NOTES AND COMMENTS

INTELSAT: GREATER PRICE FLEXIBILITY TO PRESERVE THE SYSTEM

Thomas B. Bacon*

INTRODUCTION

Telecommunications is probably the most international of industries.¹ An international telecommunications system provides the vehicle for increased international global communication, understanding, and cooperation.² Telecommunications now plays such an integral role in relationships among nations that alterations in the telecommunications structure result in world-wide economic changes.³ Modern telecommunication systems provide for the order, shipment, and delivery of goods in international trade; facilitate the international financial flows necessary for investment and management of foreign assets; and allow the efficient production of goods manufactured and assembled in more than one country.⁴ The United States depends heavily on a working interna-

* J.D. Candidate, 1989, Washington College of Law, The American University.

1. See Opening Address by The Right Honorable Jeffrey E. Pattie, British Minister for Industry and Information Technology, to USERCOM 9 (Mar. 25, 1987) [hereinafter Pattie Address] (stating that telecommunications is probably the most international of industries).

2. See *Hearings before Subcommittees on International Operations & International Economic Policy and Trade of House Committee on Foreign Affairs*, 99th Cong., 1st Sess. 3 (1985) (statement of Walter Hinchman, Pres. Walter Hinchman and Assoc., Inc.) [hereinafter Hinchman before Int'l Operations Subcomm.] (defining international telecommunications as an electronic transmission along an established link between points in two or more countries); see also Jequier, *Telecommunications for Development: Findings of the ITU-OECD Project*, 8 TELECOMMUNICATIONS POL'Y 83, 83 (1984) (remarking that the telecommunications industry makes annual worldwide investments of \$60 billion); Caplan, *The Case For and Against Private International Communications Satellite Systems*, 26 JURIMETRICS J. 180, 183 (1986) (noting that international telecommunication is one of the fastest growing sectors of the telecommunications industry).

3. Hinchman before Int'l Operations Subcomm., *supra* note 2, at 3.

4. SENIOR INTERAGENCY GROUP ON INTERNATIONAL COMMUNICATIONS AND INFORMATION POLICY, A WHITE PAPER ON NEW INTERNATIONAL SATELLITE SYSTEMS 9

tional telecommunications system for the development of its service industry, national defense, and foreign policy.

International telecommunications requires cooperation among individual domestic telecommunications organizations as well as coordination of the international system with the various legal, economic, social, and political backgrounds and the different level of technical sophistication of each participant.⁵ In 1962, a multilateral declaration, the Agreement Establishing Interim Arrangements for a Global Communications Satellite System,⁶ articulated the goal of providing the most advanced international telecommunications technology available to all areas of the world for the benefit of all nations.⁷ The membership of 112 nations⁸ in the resulting International Telecommunications Satellite Organization (INTELSAT)⁹ demonstrates the importance of a working telecommunications system to the international community despite the barriers these countries must overcome.

From the launch of the first Early Bird satellite in 1965¹⁰ through

(1985) (available at FCC Docket No. 84-1299) [hereinafter SENIOR INTERAGENCY GROUP].

5. Sarreals, *International Telecommunications Satellite Services: The Spirit of Cooperation Versus the Battle for Competition*, 26 JURIMETRICS J. 267, 301 (1986). Sarreals also notes in contrast that a single legal, economic, and political system governs domestic telecommunications. *Id.*

6. Agreement Establishing Interim Arrangements for a Global Communications Satellite System, Aug. 20, 1964, at preamble, 15 U.S.T. 1705, 1705-06, T.I.A.S. No. 5646, 514 U.N.T.S. 25, 26-28 [hereinafter Agreement Establishing Interim Arrangements]. This Agreement, signed by representatives from eleven nations, formed INTELSAT. Colino, *A Chronicle of Policy and Procedure: The Formulation of the Reagan Administration Policy on International Satellite Telecommunications*, 13 J. SPACE L. 103, 107 (1985).

7. Agreement Establishing Interim Arrangements, *supra* note 6, at preamble.

8. Casatelli, *INTELSAT'S Richard Colino Candid on Competition*, 3 NETWORK WORLD 1 (Oct. 6, 1986) [hereinafter Casatelli]. Member nations are economically and politically varied and diverse and include the People's Republic of China, Ghana, the United States, Western Europe and some South Pacific island countries. Sarreals, *supra* note 5, at 301.

9. Agreement Relating to the International Telecommunications Satellite Organization, with annexes, Aug. 20, 1971, art. V(d), 23 U.S.T. 3813, 3823, T.I.A.S. No. 7532 [hereinafter INTELSAT Agreement]. INTELSAT is a multinational commercial cooperative which owns and operates a global communications satellite system. Prepared Remarks by Richard R. Colino, Director General of INTELSAT Before the Federal Communications Bar Association 1 (Apr. 23, 1986) (available at INTELSAT) [hereinafter Colino Before Federal Communications Bar]. Next to the United States government, INTELSAT is the largest consumer of United States communications satellite technology. Comments of Abbott Washburn, at 7, In the matter of Establishment of Satellite Systems Providing International Communications, FCC Docket No. 84-1299 (Apr. 1, 1985) [hereinafter Comments of Abbott Washburn]. INTELSAT has awarded \$4.2 billion toward equipment expenditures to the United States telecommunications industry as of 1985. *Id.*

10. Colino, *The Art of Global Salesmanship*, 62 INT'L PRESS TELECOMMUNICA-

the mid-1980s, INTELSAT has been largely successful in providing a worldwide international telecommunications satellite system. Recent technological revolutions however, have widened economic disparities among the countries served. These developments, by creating new demands in the telecommunications markets of the most advanced nations, place new pressures on the international telecommunications system.

Under article V(d) of the INTELSAT Agreement, the service charges for utilization of the INTELSAT system are averaged among all users of each service without regard to geographic location, traffic volume, economic status, or the state's efficient use of the system. Thus, the cost of providing telecommunications services to less efficient users burdens the more efficient users. This practice frustrates the goal of INTELSAT, namely meeting the newest market demands by forcing customers of the most advanced technology to pay inflated prices.

The pricing inflexibilities of INTELSAT create strong incentives for private competition in the international satellite telecommunications market. Consequently, the largest and most advanced customer of INTELSAT, the United States, has authorized the establishment of separate competitor systems. The United States asserts that the separate competitor system is consistent with its national interest.

The separate systems, if implemented, will cause great economic harm to INTELSAT and many of its members. The purpose of this Comment is to advocate the amendment of article V(d) of the INTELSAT Agreement to create additional price flexibility and allow it to more efficiently meet the demands of a diversifying telecommunications market without harming the availability of global telecommunications service to the underdeveloped regions of the world.

Part I of this Comment discusses the creation of INTELSAT, the subsequent growth of the international telecommunications market, and the resulting disparity between markets of the developed and underdeveloped countries. Part II outlines the practice of telecommunications price subsidization for less developed countries (LDCs) under article V(d) of the INTELSAT Agreement and analyzes the effects of this practice on the overall telecommunications market. Part III examines the introduction of separate competitor systems and the responsive marketing attempts of INTELSAT to meet the challenge. Part IV discusses the degree of price flexibility for services allowed under article V(d). Part V proposes an amendment to article V(d) that would pro-

vide for greater pricing flexibility under INTELSAT and, at the same time, limit pricing flexibility in a manner consistent with the ultimate preservation of the system. Part VI argues that greater pricing flexibility will ultimately prevent harm to INTELSAT's investor owners while maintaining pace with the revolutionizing markets of the developed world. Part VII proposes that a compromise between complete flexibility and continued subsidization will prevent harm to LDCs, thereby preventing the withdrawal of these countries from the INTELSAT system. This Comment concludes that a pricing flexibility modification to art. V(d) will best serve all aspects of the international telecommunications satellite market.

I. HISTORICAL BACKGROUND

A. THE DEVELOPMENT OF INTERNATIONAL TELECOMMUNICATIONS

International telecommunications has developed in a "leapfrog pattern" since the first major breakthrough in the mid-1950s, when newly developed submarine cables began to replace high frequency radio as the provider of communications services.¹¹ This new system captured most of the international communications market in telephone and telegraph/data services.¹² The laying of transatlantic cables for these services was maintained until the mid-1960s.¹³

The Cold War, the space race, and the desire of the United States to formulate an international mechanism through which it could project its leadership into the communications satellite competition stimulated the creation of INTELSAT.¹⁴ The Kennedy administration called for the establishment of a global communications satellite network as an attempt to compete with the Soviet Union for the allegiance of the developing nations.¹⁵ As a consequence, on August 20, 1964, the United

11. *Id.*

12. *Id.* at 32.

13. Sarreals, *supra* note 5, at 271 n.16.

14. *Id.*

15. Reply Comments of International Relay, Inc. at 7 n.9, In the Matter of Establishment of Satellite Systems Providing International Communications, FCC Docket No. 84-1299 (June 5, 1985). On July 21, 1961, the Kennedy administration invited "all nations to participate in a communication satellite system in the interest of world peace and closer brotherhood among peoples throughout the world." *Id.* at 14. The policy statement favored a global system which included service where certain portions of the coverage were unprofitable. *Id.* This was termed a 'universalist' system. *Id.* at 8.

On January 6, 1961, shortly before the inauguration of President Kennedy, Soviet Premier Nikita Khrushchev declared that the communists would triumph not through nuclear war, but through "national liberation" wars in the newly decolonized areas in Africa, Asia, and Latin America. *Id.* Later in 1961, various Soviet publications announced that the Soviets planned to launch a geosynchronous communications satellite.

States and ten other countries signed an Interim Executive Agreement calling for the establishment of the International Telecommunications Satellite Consortium.¹⁶ Seven years later, these eleven countries finalized permanent arrangements and established INTELSAT.¹⁷

INTELSAT has presided over the global telecommunications system through an important period of the telecommunications revolution.¹⁸ The Early Bird, launched in 1965, was the first communications satellite in the world and provided 240 voice channels.¹⁹ By 1969, INTELSAT had perfected its international telecommunications with the placement over the Indian Ocean of the last of its third generation of satellites, INTELSAT III.²⁰

From then on, satellites have provided for most of the growth in international communications.²¹ INTELSAT VI, planned for launch in 1989, will carry 120,000 simultaneous two-way telephone circuits plus three television channels.²² Today, INTELSAT has 16 satellites in orbit²³ that serve 173 countries²⁴ through more than 1,000 satellite paths²⁵ connecting almost 400 earth station antennae.²⁶ INTELSAT carries two-thirds of the global television transmissions,²⁷ more than

The United States feared that four such satellites could blanket the entire world and give the Soviet Union domination over the international communications satellite system. *Id.*

16. See Sarreals, *supra* note 5, at 273 (discussing the international situation present at the formulative stages of the Agreement).

17. *Id.*

18. *Id.* *Global Salesmanship*, *supra* note 10, at 32. *Long Range Goals in International Telecommunications and Information*, Senate Committee on Commerce, Science, and Transportation, 98th Cong. 1st Sess. 132-33 (1983) (Report of National Telecommunications and Information Administration) [hereinafter NTIA Report]. The NTIA Report describes INTELSAT as "an unqualified, outstanding success on institutional, financial, and operational grounds and must be considered a triumph of the United States foreign policy." *Id.*

19. *Global Salesmanship*, *supra* note 10, at 32.

20. *Id.*

21. *Id.*

22. *Id.* In the alternative, INTELSAT VI can transmit 200 television channels in an all video mode. *Id.* Address of Richard Colino, Director of INTELSAT, to the Parliamentary and Scientific Committee of the House of Commons 6 (Jan. 22, 1985) (available at INTELSAT) [hereinafter Colino before Parliamentary Committee] (explaining that future satellite communications will include scanning spot beams which will give small earth stations their own personalized communications every millisecond). Laser inter-satellite links will carry traffic directly from hemisphere to hemisphere. *Id.*

23. *Global Salesmanship*, *supra* note 10, at 32.

24. Sarreals, *supra* note 5, at 273 n.26.

25. NTIA Report, *supra* note 18, at 115-16.

26. *Global Salesmanship*, *supra* note 10, at 31.

27. Sarreals, *supra* note 5, at 273 n.26. INTELSAT controls a much higher proportion of intercontinental and transoceanic traffic, providing 98 percent of television transmissions. Colino before Federal Communications Bar, *supra* note 9, at 3.

360 two-way business service circuits,²⁸ and most of the transoceanic telecommunications traffic.²⁹ The INTELSAT system brings modern international telephone communications to the least developed nations in the most remote areas of the world, and provides twenty-seven countries with their domestic communications systems.³⁰ Many commentators have lauded the provision of these services to LDCs as advancing the cause of international peace and good will.³¹

B. THE DIVERSIFYING MARKET

The modern global telecommunications structure has evolved into two contrasting markets: a diverse market in the most developed countries and a relatively simplistic market for the rest of the world.³² The least developed countries now have a primary need for basic telecommunications services.³³ As countries move up the scale of development, however, they demand more dynamic and sophisticated telecommunications services to satisfy their increasingly diverse economies and advanced technological needs.³⁴ This becomes most apparent when a na-

INTELSAT carried over 49,000 hours of international television in 1984. Colino before Parliamentary Committee, *supra* note 22, at 1. It carried eleven full-time international television leases in 1986. *Global Salesmanship*, *supra* note 10, at 32. INTELSAT offers 229 different video tariffs and services, including worldwide transmission of the Olympic Games and World Cup Soccer Matches. Colino before Federal Communications Bar, *supra* at 9. It has transmitted global news events addressing political unrest in Libya and the Philippines, as well as the 1969 landing on the moon at Tranquility Base. *Id.* at 3. INTELSAT also makes possible the WORLDNET program of the United States Information Agency. *Id.* at 3.

28. *Global Salesmanship*, *supra* note 10, at 32. See also Colino before Federal Communications Bar, *supra* note 9, at 3 (commenting that 1,951 banks in fifty-eight countries transmit electronic funds through INTELSAT).

29. Colino before Parliamentary Committee, *supra* note 22, at 2. INTELSAT carries approximately 70,000 channels or two-thirds of the international telephone services of the world. *Id.*

30. INTELSAT, Press Release No. 86-105 at 4 (Dec. 12, 1986) (available at INTELSAT).

31. Reply Comments of the Nat'l Black Media Coalition, Transafrica, and the American Committee on Africa at 3, In the Matter of Establishment of Satellite Systems Providing International Communications, FCC Docket No. 84-1299 (June 5, 1985) [hereinafter Reply Comments of Transafrica].

32. See Markoski, *Telecommunications Regulations as Barriers to the Transponder Flow of Information*, 14 CORNELL INT'L L. J. 287, 294 (1981) (noting that there is no competition in telecommunications services in most countries).

33. Snow, *Regulation to Deregulation: The Telecommunications Sector and Industrialization*, 9 TELECOMMUNICATIONS POL'Y 4, 281, 285 (1985).

34. *Id.* The dramatic advance of the international telecommunications needs of end users, primarily businesses, enterprises, and organizations, has exceeded the ability of any single supplier to meet them. Comments of Orion Satellite Corp. at 87, In the Matter of Establishment of Satellite Systems Providing International Communications, FCC Docket No. 84-1299 (Apr. 1, 1985) [hereinafter Comments of Orion]. Moreover, studies reveal a growing international demand for foreign entertainment programming.

tion transforms its economy from the industrial and manufacturing sectors into the information sector.³⁵

As the most advanced users of INTELSAT services gradually come to rely more on international communications and consequently increase the cost efficiency of their use of the INTELSAT system, LDCs continue to lag behind, creating a disproportionate allocation of costs.³⁶ The most developed nations generate the highest volume of international telecommunications traffic and INTELSAT revenue.³⁷ In contrast, the relative infrequency of international communications traffic in LDCs results in the high cost of providing these services to those countries.³⁸ Maintenance of a singular global telecommunications system over these various markets is problematic. The remainder of this Comment discusses various proposed solutions to this problem.

II. PRICE SUBSIDIZATION UNDER ARTICLE V(d)

Article V(d) of the INTELSAT agreement requires that the cost to all customers for use of the INTELSAT system remain the same for each type of service even though telecommunications in geographic areas with high volumes of traffic (high density countries or areas) is more cost-efficient than telecommunications in areas with low volumes

Comments of ESPN, Inc. at 17, In the Matter of Establishment of Satellite Systems Providing International Communications, FCC Docket No. 84-1299 (Apr. 1, 1985).

35. See Comments of Technova, Inc. at 30-31, In the Matter of Establishment of Satellite Systems Providing International Communications, FCC Docket No. 84-1299 (Apr. 1, 1985) [hereinafter Comments of Technova] (asserting that the Pacific market, for example, is presently growing rapidly in terms of trade and diversifying its telecommunications needs). Demand for more sophisticated, tailor-made telecommunications for the industrialized countries is expected to grow at an exponential rate. Snow, *supra* note 33, at 287.

36. Reply Comments of Transafrica, *supra* note 31, at 6. Approximately one-fourth of INTELSAT members are Western, developed countries while the remaining three-fourths represent the developing world and the Least Developed Countries (LDCs). See Colino before Parliamentary Committee, *supra* note 22, at 5. The twenty-five developed countries own approximately two-thirds of INTELSAT's shares, corresponding to two-thirds use. *Id.*

37. Colino before Parliamentary Committee, *supra* note 22, at 6.

38. *Id.* Sixty percent of all INTELSAT international antennae are located in developing countries. *Id.* It is estimated that 50 percent of the 1,500 INTELSAT earth stations generate less than 10 percent of INTELSAT's revenues. Compare Recent Development, *INTELSAT*, 1 AM. U. J. INT'L L. & POL'Y 413, 418 n.24 (1986) [hereinafter Recent Development, *INTELSAT*] (observing that Sub-Saharan Africa has a total of 174 earth stations, an average of four per country or one for every two million people) with Guttman, *Telecommunications and Sub-Saharan Africa*, 10 TELECOMMUNICATIONS POL'Y at 325, 332 (1986) (commenting that Sweden, Denmark, Finland, and Norway, with more than 22 million people, bear more traffic using a single shared station).

of traffic (low density countries or areas).³⁹ Such inflexibility under article V(d) results in the high density areas subsidizing the development and use of international telecommunications in the low density areas.⁴⁰ Consequently, the low density countries pay less for their circuit capacity through INTELSAT than they would in a system subject to marketplace pricing.⁴¹ Thus, the high density countries pay more for using INTELSAT space capacity than they would if the international telecommunications market were open to competition.⁴² This causes distortions in the marketplace.⁴³ This price gap between the natural marketplace price and the inflated price of INTELSAT subsidization creates

39. INTELSAT Agreement, *supra* note 9, art. V(d). When the transponder of a satellite carries a single, large traffic stream, or high power spot beam, between two locations, the cost per channel is lower than when it carries many traffic streams, or broad antenna beams, among many locations. Comments of Walter N. Hinchman at 17, In the Matter of Establishment of Satellite Systems Providing International Communication, FCC Docket No. 84-1299 (Apr. 1, 1985) [hereinafter Hinchman Comments]. For example, no single African communications route can fill the channel capacity of a transponder. Reply Comments of Transafrica, *supra* note 31, at 6. Consequently, the cost per channel is higher than that needed to carry a large stream of traffic between high density locations. *Id.*

40. INTELSAT Agreement, *supra* note 9, at preamble. See *International Satellite Issues: Hearings Before the Subcomm. on Telecommunications, Consumer Protection, and Finance of the House Comm. on Energy and Commerce*, 98th Cong., 2d Sess. 797, 811 (1984) (statement of Walter Hinchman, Pres., Walter Hinchman and Assoc., Inc.) [hereinafter Hinchman before Telecommunications Subcommittee] (explaining that cross subsidies exist between various INTELSAT members, geographic regions, and services). Under cross subsidization, more profitable, high density routes allow for the assessment of lower charges for unprofitable, low density routes. See also Communications Satellite Act of 1962, § 102(b), 47 U.S.C. § 701(b) (1982) (stating that the United States will direct care and attention to providing such services to economically less developed countries).

41. Hinchman Comments, *supra* note 39, at 17.

42. See *id.* at 17 (stating that strictly commercial enterprises would find it necessary to charge lower rates on high-volume routes than INTELSAT currently charges on those same routes). Because the cost of satellite communications is relatively distance insensitive, the cost of a call between San Francisco and New York should be the same as a call from New York to London. Comments of the Bureaus of Competition, Economics, and Consumer Protection of the Federal Trade Commission at 8, In the Matter of Establishment of Satellite Systems Providing International Communications FCC Docket No. 84-1299 (Apr. 1, 1985) [hereinafter Comments of Federal Trade Commission]. Instead, the cost of a call from New York to London is approximately three times the cost of a similar call from New York to San Francisco. *Id.* at 8-9. Similarly, one hour of transcontinental video transmission costs \$790, compared to a price of \$2,700 for a transatlantic transmission. *Id.* at 9.

43. See Comments of American Telephone & Telegraph Co., at 43, In the Matter of Establishment of Satellite Systems Providing International Communications FCC Docket No. 84-1299 (Apr. 1, 1985) [hereinafter Comments of AT&T] (stating that economists consider cross-subsidies a poor method of achieving desirable social goals). Subsidies distort market pricing and often promote uneconomic behavior in the marketplace. *Id.* Such cross-subsidies are not sustainable because traffic will be lost to competitors of INTELSAT. *Id.*

an incentive for private entrepreneurs to enter the communications market in high density areas, hoping to undersell INTELSAT services.⁴⁴

This bifurcated telecommunications market creates a dilemma in fostering the optimal evolution of a global network. The international telecommunications system faces the task of fostering the natural evolution of a market for the most advanced services while protecting the markets of the least advanced countries. The solution to this problem is that the supply side of international satellite telecommunications must adapt to the rapid advance of demand and charge prices that are more reflective of the marketplace.⁴⁵ Yet some form of regulation of the supply side is necessary to prevent serious harm which may occur if the forces of the marketplace are allowed to govern unchecked.

III. THE INTRODUCTION OF SEPARATE SYSTEMS

The greatest challenge to INTELSAT's monopoly of the supply side came from its most advanced customer, the United States. The Communications Satellite Act of 1962 (the Act) declared that it is the purpose and policy of the United States to establish, in cooperation with other countries, a global commercial communications satellite network responsive to public needs and national objectives.⁴⁶ The statute allows private entrepreneurs to establish additional satellite systems provided that the systems are in the national interest or meet unique governmental needs.⁴⁷ On November 28, 1984, pursuant to the authority provided in sections 701(d) and 721(a)(6) of the Act, President Reagan determined that the national interest required separate systems.⁴⁸ Consequently, on July 25, 1985, the Federal Communications Commission (FCC) adopted a Report and Order granting several applications to establish separate, private international communication satellite sys-

44. Hinchman Comments, *supra* note 39, at 17.

45. See Comments of Technova, *supra* note 35, at 28-29 (stating that the Pacific region as well as other regions require systems that are innovative, high quality, easy to use, readily switched from one application to another, and capable of integration). Users complain, however, that the supplier, who defines the product, cannot tailor it to meet the changing needs of each user. *Id.*

46. Communications Satellite Act, § 102(a), 47 U.S.C. § 701(a) (1982).

47. *Id.* § 102(d), 47 U.S.C. § 701(d). The Act gives the President the authority to determine whether separate systems are required to meet unique governmental needs or are otherwise required in the national interest. *Id.* § 201(a)(6), 47 U.S.C. § 721(a)(6).

48. Presidential Determination No. 85-2, 49 Fed. Reg. 46,987 (1984). Due to its volume of international telecommunications traffic and its international leadership role, only the United States has the ability to unilaterally deviate from INTELSAT. Comments of Abbott Washburn, *supra* note 9, at 11.

tems.⁴⁹ These separate systems, when eventually launched, still will not

49. Satellite Systems Providing International Communications, Report and Order, 50 Fed. Reg. 42,266 (1985) [hereinafter FCC Report and Order]. In the Report and Order, the FCC granted conditional authorization to the applications of RCA Communications, Inc. (RCA), International Satellite Inc. (ISI), and PanAmerican Satellite Corporation (PanAmSat), and gave Orion Satellite Corporation (Orion) and Cygnus Satellite Corporation (Cygnus) 45 days to modify their proposals to ensure a more efficient use of the frequency spectrum. Sarreals, *supra* note 5, at 292 n.150. Eventually, the Commission granted final authority to all applicants. Colino before Federal Communications Bar, *supra* note 9, at 15.

The ISI proposed system consists of two orbiting satellites and one ground spare that would connect the United States and Europe. Sarreals, *supra* note 5, at 292 n.150. The satellites have thirty-two transponders each and would carry video, audio, and data transmissions. *Id.* The total system would cost an estimated \$230 million. *Id.*

The RCA proposal consists of an antenna design modification of a previously authorized domestic satellite, SATCOMVI, to carry video, audio, and data transmission services between Europe and Africa. *Id.* Modification of the satellite will cost an estimated \$700 million. *Id.*

The Orion system consists of two orbiting satellites, with 22 transponders each, and one ground spare. *Id.* The satellites will provide video, audio, and data services to the eastern United States and Western Europe. *Id.*

The Cygnus system proposes to provide digital communications services, including video teleconferencing, high-speed facsimile, computer to computer communications, remote printing, teletext, videotext, and data collection and distribution. *Id.* The system will supply services via two orbiting satellites with one ground spare, each with 16 transponders. *Id.* The satellites will serve the continental United States and Western Europe, and will provide services via spot beam to Puerto Rico, the Virgin Islands, the Caribbean Basin, and parts of Central America. *Id.*

The PanAmSat proposal consists of two orbiting satellites providing domestic satellite services to Latin America with subregional video and audio distribution services between New York, Miami, and Latin American countries. *Id.* PanAmSat will sell or lease transponder capacity to television and radio networks, international news organizations, and private and governmental parties. *Id.* The total estimated cost of the system is \$198 million. *Id.*

In May of 1986, Comsat and Peru requested the initiation of formal consultations required under article XIV(d) to consider the PanAmSat proposal. Statement of D. Leive, Legal Advisor to INTELSAT Before the Int'l Bar Ass'n Concerning the International Telecommunication & Satellite Organization (Sept. 19, 1986) (available at INTELSAT) [hereinafter Leive before Int'l Bar Ass'n]. On December 12, 1986, the Board of Governors at the 69th Meeting of INTELSAT decided to advise the next INTELSAT Assembly of Parties to reach favorable findings on the proposed PanAmSat network. INTELSAT Board of Governors Recommends Coordination of the Proposed PanAmSat Satellite Network, FCC Release No. 86-105, 2 (Dec. 12, 1986) (available at INTELSAT). The Board noted that the transponders of the PanAmSat network will be technically compatible with the use of the radio frequency spectrum and orbital space by existing or planned INTELSAT space segments; that PanAmSat will not cause significant economic harm to INTELSAT's global system; and that PanAmSat will not prejudice the establishment of direct telecommunication links through the INTELSAT space segment among all participants. *Id.* In March of 1986, Columbia Communications Corporation also filed an application with the FCC for authority to construct, launch, and operate a transpacific satellite system linking portions of North America and Asia. In the Matter of Columbia Communications Corp., FCC Release No. 86-536 (released Dec. 18, 1986) (LEXIS, FEDCOM library, FCC File). The FCC granted the requested authority in December of 1986. *Id.*

In January of 1987, the FCC granted authority to McCaw Space Technologies, Inc.

provide service for several years. For example, these FCC-authorized systems have not yet obtained foreign correspondents, financing, insurance, or even potential customers.⁵⁰ Thus, barriers to entry into private systems of international telecommunications satellite services remain extremely high.⁵¹

A. THE DISADVANTAGES OF SEPARATE INTERNATIONAL SYSTEMS

Although their operations will be limited to customized services, pri-

to launch, operate, and construct a satellite system named Celestar. In the Matter of McCaw Space Technologies, Inc., FCC Release No. 87-1 (released Jan. 15, 1987) (LEXIS, FEDCOM library, FCC file). McCaw plans to serve multinational businesses, financial institutions, international organizations, and video programmers and distributors. *Id.*

50. Colino before Parliamentary Committee, *supra* note 22, at 2. INTELSAT's portion of a bill for a typical international phone call amounts to only eight-percent, with the remaining 92% going to the providers of terrestrial services, equipment, and maintenance, including earth stations. *Id.*

51. Colino before Federal Communications Bar, *supra* note 9, at 15. Articles IV(d) and (e) provide that any Signatory, Party or entity within INTELSAT's jurisdiction wishing to establish a separate public fixed or mobile satellite system for international telecommunication services must furnish all relevant information to and consult with INTELSAT's Assembly of Parties. *Id.* Article XIV(d) of the INTELSAT Agreement requires that separate systems must be approved by the Assembly of Parties prior to their implementation. INTELSAT Agreement, *supra* note 9, arts. XIV(d),(e).

Separate systems must meet certain criteria for approval: 1) technical compatibility with facilities of the separate systems with INTELSAT with regard to the use of the radio frequency spectrum; and 2) the separate systems must not cause "significant economic harm to INTELSAT." *Id.*

Negotiations leading to the adoption of article XIV(d) involved a debate concerning the degree of economic harm to INTELSAT allowable from separate systems. Sarreals, *supra* note 5, at 293 n.151. A United States view in the debate wanted to bar "any economic harm" and an opposing group wanted to prohibit only "substantial economic harm." *Id.* The wording "significant economic harm" was a compromise. *Id.* COMSAT argues that the debates focused on the establishment of limited regional systems, that would compete only peripherally with INTELSAT, and not on separate systems established to compete directly with INTELSAT. *Id.*

But see Recent Development, *INTELSAT*, *supra* note 38, at 416-17 n.16 (noting that the "one or more foreign authorities" requirement effectively circumvents article XIV(d). The requirement propounded in the White Paper that separate systems obtain approval from one or more foreign authorities rather than the entire Assembly of Parties increases the likelihood of the establishment of separate systems because it is far easier for a proposed separate system to appeal to the national interests of one or more foreign authorities with similar interests than to persuade the entire Assembly of Parties.

Congress, however, provided further restriction on the "one or more foreign authorities" requirement. Foreign Relations Authorization Act, Pub. L. No. 99-93, § 146, 99 Stat. 405, 425 (to be codified at 22 U.S.C. § 2651 (1985)). The Act provides that should the Assembly of Parties fail to approve a separate system, and the President determines to pursue the separate system, the Secretary of State shall submit a report to Congress setting forth the foreign policy reasons for the President's determination, and a plan to minimize negative effects of the separate system. *Id.*

vate systems will compete for traffic presently routed through the INTELSAT system.⁵² These separate systems will cause economic loss to INTELSAT in several ways: 1) the vast majority of separate systems will seek the high density markets where they can underprice INTELSAT and obtain a larger profit than they would by establishing routes servicing low density areas⁵³ and, 2) the separate systems will divert anticipated traffic, and the revenues generated by that traffic, for which INTELSAT had incurred costs.⁵⁴ Moreover, separate satellite systems will harm foreign markets in both the developed⁵⁵ and underdeveloped world.⁵⁶

B. THE ADVANTAGES OF SEPARATE SYSTEMS

1. *The Ideal of Competition*

The FCC decision to permit separate, private international communications systems reflects a dominant theme in United States economic policy that urges opening telecommunications to marketplace forces so as to bring about competitive and efficient rates, promote higher quality and a wider variety of services, and develop innovative technology.⁵⁷

52. Sarreals, *supra* note 5, at 287 n.119.

53. Rein, McDonald, Adams, Fraule & Nelsen, *Implementation of a U.S. "Free Entry" Initiative for Transatlantic Satellite Facilities: Problems, Pitfalls, and Possibilities*, 18 GEO. WASH. J. INT'L & ECON. 459, 481 (1985) [hereinafter Rein].

54. See Walter Hinchman Assoc., *The Economics of International Satellite Communications at vi*, In the Matter of Establishment of Satellite Systems Providing International Communications, FCC Docket No. 84-1299 (May 18, 1984) [hereinafter *Economics of Communications*] (stating that the separate systems would divert INTELSAT traffic, raising the cost per unit of utilized capacity and causing INTELSAT considerable economic harm); see also Comments of Abbott Washburn, *supra* note 9, at 3 (warning that a proliferation of separate systems may lead to the eventual break-up of INTELSAT).

55. See *infra* notes 92-98 and accompanying text (discussing harm to the Post, Telegraph and Telecommunications Ministries (PTTs) if INTELSAT incurs lost revenues from the establishment of separate satellite systems).

56. See *id.* (noting that separate systems challenge the viability of a single, global INTELSAT system and threaten unbearable satellite circuit cost increases for countries in low density areas). Authorities from Austria, Belgium, Cyprus, Denmark, Finland, West Germany, Greece, Iceland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the Vatican have expressed their opposition to separate satellite systems.

57. Sarreals, *supra* note 5, at 270. One key reason behind the emergence of private competition is the failure of INTELSAT to meet all international communications demands. Comments of Orion, *supra* note 34, at 87; see also Comments of Gannett Co. Inc., at 4, In the Matter of Establishment of Satellite Systems Providing International Communications, FCC Docket No. 84-1299 (Apr. 1, 1985) (analogizing from the domestic market to conclude that competition maximizes consumer welfare in terms of availability, price, quality, and reliability); Comments of the Federal Trade Commission, *supra* note 42, at 8 (stating that the introduction of separate satellite systems

The applicants for separate systems claim that private services will offer the following advantages: 1) lower circuit costs than INTELSAT; 2) a complete circuit from customer premises to customer premises through a single carrier, rather than through the number of actors presently required under the INTELSAT system; and 3) the ability to connect the user to the international satellite system through transmitters and receivers located on the premises of the customer.⁵⁸

2. INTELSAT as Competitor

Although the implementation of separate systems has not yet occurred, the challenge of separate systems to INTELSAT has wrought tremendous changes to the market.⁵⁹ INTELSAT has begun to introduce a wide variety of customized services such as the distribution of financial information, environmental and scientific data, cash management operations, and video conferencing. INTELSAT is determined to meet all market demands and effectively eliminate its competitors.⁶⁰

would satisfy customer needs and will lead to greater innovation).

Because INTELSAT is the sole provider of international satellite communications circuits, the United States government has called it a "monopoly." Sarreals, *supra* note 5, at 294. The FCC approved the separate systems because they believed that competition, rather than monopoly, would better serve the international telecommunications market. *Id.* at 295.

58. Rein, *supra* note 53, at 471. Utilization of private switched systems is an effective means of capturing substantial portions of the computer networking market. Recent Development, *INTELSAT*, *supra* note 38, at 417 n.20. Users with compatible data systems could link up directly with the private system without having to hook up into the public-switched system. *Id.* The increase in personal computer sales will help utilize private-switched systems. *Id.* In 1984, one-in-four million office personal computers were linked in private-switched networks. *Id.* The Gartner Group, a Connecticut consultant, predicts that by 1989 nearly 19 million or three-quarters of all computers will be linked to other computers. *Id.*

59. Comments of Pan American Satellite Corp., In the Matter of Establishment of Satellite Systems Providing International Communications, at 2, FCC Docket No. 84-1299 (April 1, 1985).

60. See INTELSAT Press Release 86-33 (May 22, 1986) (available at INTELSAT) (explaining that INTELSAT responds to the expansion of separate satellite systems through new service offerings and price structure changes); Casatelli, *supra* note 8, at 44 (confirming that INTELSAT has improved its technology in modulation techniques, spectrum efficiency, higher powered satellites and less costly earth stations); *id.* at 12-13 (arguing that INTELSAT has become a truly market oriented network by combining current developments with new traffic aggregation and switching techniques); see also *Global Salesmanship*, *supra* note 10, at 34 (observing that the threat of competition has made INTELSAT more responsive to market demands).

The rapidly changing telecommunications market increases demands for high-speed and wideband data services, video and audio related services, low cost services, and for facilities under the control of or near the customers rather than handled through long-distance carriers. *Global Salesmanship*, *supra* note 10, at 12-13. By providing wider coverage and closer connectivity to customer premises, INTELSAT has become more flexible in meeting the needs of its users. Colino before Federal Communications Bar,

An analysis of the advantages and disadvantages of separate satellite systems highlights the need to maintain the potential for separate systems because the threat of the introduction of separate systems forces INTELSAT to behave as though competition already existed. Simultaneously, INTELSAT must effectively shut out these competitor systems so as to protect both the investor-owners of INTELSAT and the markets of LDCs. Although proving effective in meeting these particular market demands, the question remains whether INTELSAT can continue to meet demands placed upon it at prices necessary to narrow competition.⁶¹

IV. PRICE FLEXIBILITY IN INTELSAT

As a result of the United States proposal to allow separate satellite systems, many members of INTELSAT have acknowledged that INTELSAT must have greater pricing flexibility to compete effectively with the private systems.⁶² In 1985, the United States Congress

supra note 9, at 12-13. INTELSAT is exploring the concept of "Transponder Rights of Use" (TRU). Colino before Parliamentary Committee, *supra* note 22, at 9-10. This service, subject to the approval of the members of INTELSAT, will establish exclusive connections between two or more users. *Id.* This service will not only cater to high density traffic users but also will facilitate efficiency while maximizing utilization of capacity. *Id.*

Cf. Comments of Orion, *supra* note 34, at 88 (stating that the incentive of INTELSAT to serve new market needs will disappear if alternatives are eliminated). While INTELSAT offered only 12 new services from 1973 to 1983, the governing board of INTELSAT approved 356 new digital services between 1984 and mid-1986 including 187 types of television services and 154 types of integrated digital services. *Global Salesmanship*, *supra* note 10, at 33. The Integrated Services Digital Network (ISDN) and Intelsat Business Services (IBS) control worldwide audio and video teleconferencing, distribution of audio program material, high and low-speed facsimile, high and low-speed data transfer, data collection and distribution, remote newspaper printing, packet switching, digital voice, electronic mail and document distribution, electronic funds transfer, and telex data gathering and distribution service using micro terminals as small as two feet in diameter and basic satellite facilities for rural and remote communities. INTELSAT, Press Release No. 86-105, at 4 (Dec. 12, 1986).

61. See Comments of International Satellite Inc. at 73, In the Matter of Establishment of Satellite Systems Providing International Communications, FCC Docket No. 84-1299 (Apr. 1, 1985) [hereinafter Comments on International Satellite Inc.] (warning that because INTELSAT is essentially a business, it is doomed to fail unless it responds to marketplace realities).

62. *Global Salesmanship*, *supra* note 10, at 34. See Leive before Int'l Bar Ass'n, *supra* note 49, at 13 (noting that prior to 1985, Tanzania and Cameroon submitted a proposal to amend article V(d), permitting greater pricing flexibility to meet competition when it was in the best interests of INTELSAT). See also Comments of AT&T, *supra* note 43, at 31 (recommending that INTELSAT have the ability to allow prices to fluctuate by geographic region as an additional competitive option). If INTELSAT is not allowed to set its prices competitively, such price inflexibility will permit competitors to capture market shares regardless of their relative efficiency. Comments of Abbott Washburn, *supra* note 9, at 24. Circumstances like these defeat the purpose of

amended the Department of State Authorization Bill⁶³ and the Communications Satellite Act of 1962⁶⁴ in order to address the problems of limitations on the pricing flexibility of INTELSAT. The amendment to the Communications Satellite Act authorizes the Secretary of State to consult with INTELSAT regarding the appropriate modification of article V(d) to permit greater price flexibility.⁶⁵

Presently, article V(d) of the INTELSAT Agreement gives the INTELSAT Board of Governors considerable latitude to set rates on the basis of such operational parameters as voice, television, data, power, bandwidth, type of satellite capacity, degree of protection, and other specifications.⁶⁶ The position of the United States is that no amendment to article V(d) is necessary because these parameters, if utilized, already provide sufficient pricing flexibility.⁶⁷

introducing competition to improve market efficiency. *Id.*

63. Foreign Relations Authorization Act, Pub. L. No. 99-93 § 146, 99 Stat. 405, 425 (to be codified at 22 U.S.C. § 2651 (1985)).

64. Communications Satellite Act of 1962, § 102(c), 47 U.S.C. § 701(c) (1982).

65. *Id.* The Act states:

The Secretary of State shall consult with the United States signatory to INTELSAT and the Secretary of Commerce regarding the appropriate scope and character of a modification to article V(d) of the INTELSAT Agreement which would permit INTELSAT to establish cost-based rates for individual traffic routes, as exceptional circumstances warrant, paying particular attention to the need for avoiding significant economic harm to the global system of INTELSAT as well as United States national and foreign policy interests.

Id.

66. INTELSAT Agreement, *supra* note 9, art V(d) which states in pertinent part ". . . All users of the INTELSAT space segment shall pay utilization charges determined in accordance with the provisions of this Agreement and the Operating Agreement." *Id.*

Article X of the INTELSAT Agreement provides that the Board of Governors shall periodically establish rates of charge for space segment utilization of INTELSAT space segment capacity. *Id.* art. X(viii).

Article VIII of the INTELSAT Agreement empowers the Meeting of the Signatories "to establish general rules, upon the recommendation of and for the guidance of the Board of Governors, concerning. . . (c) the establishment and adjustment of the rates of charge for utilization of the INTELSAT space segment on a non-discriminatory basis." *Id.* art. VIII(v)(c). See also Leive before Int'l Bar Ass'n, *supra* note 49, at 12 (listing parameters for the Board of Governors).

67. *Global Salesmanship*, *supra* note 10, at 34; see FCC Report and Order, *supra* note 49, at 42,305 (stating that INTELSAT possesses sufficient, but not complete, price flexibility). The Secretaries of State and Commerce jointly issued a "White Paper" indicating the official United States position. SENIOR INTERAGENCY GROUP, *supra* note 4, at 1. The position of the United States with regard to INTELSAT is highly influential. Comments of the National Black Media Coalition, Transafrica, and the American Committee of Africa at 9, FCC Docket No. 84-1299 (Apr. 1, 1985) [hereinafter Comments of Transafrica]. The United States share of INTELSAT was 24% in 1985. *Id.* See also Colino before Parliamentary Committee, *supra* note 22, at 7 (noting that the share of investment in INTELSAT determines the voting in the Board of Governors). Article V(b) of the INTELSAT Agreement provides that each Signatory is to maintain an investment share equal in proportion to its percentage of utilization of

Although INTELSAT provides some pricing flexibility, this flexibility is limited.⁶⁸ Article V(d) permits the Board of Governors to devise

the INTELSAT space segment. INTELSAT Agreement, *supra* note 9, art. V(b). *But see* Comments of Abbott Washburn, *supra* note 9, at 23 (criticizing the White Paper for not clearly addressing the extent of price flexibility issue). If the United States fails to take a clear position and substantive corrective action, INTELSAT will not be able to compete effectively. *Id.*

68. *See* Comments of AT&T, *supra* note 43, at 32 (stating that while INTELSAT may well be equipped to compete under current circumstances, it must also be allowed to price on an incremental cost basis to effectively compete in the future).

In response to the United States proposal for separate systems, the Assembly of Parties of INTELSAT requested that the Board of Governors use the inherent flexibility provided by article V(d). Leive before Int'l Bar Ass'n, *supra* note 49, at 12. To test the degree of price flexibility inherent in article V(d), the INTELSAT Director General and Board of Governors authorized, in principle, the establishment of a system for closed digital business services in the Caribbean region (CARIBNET) at half the price charged for similar services elsewhere. *See Global Salesmanship, supra* note 10, at 34 (noting that recognition of the need to charge different rates for similar services offered in different ocean regions constituted a major philosophical change in INTELSAT policies).

The establishment of a fifty-percent discount for the Caribbean region violates the INTELSAT Treaty because it lies beyond the parameters of article V(d) pricing flexibility. *See* Vienna Convention on the Law of Treaties, *opened for signature* May 23, 1969, U.N. Doc. A/CONF 39/27, art. 31(1), *reprinted in* 8 I.L.M. 679, 692-93 (1969), *entered into force on* Jan. 27, 1980 [hereinafter Vienna Convention] (providing that good faith compliance is required by signatories in accordance with the terms of a treaty).

Many of the nations represented by INTELSAT are signatories to the Vienna Convention. Letter from Arnold & Porter to David M. Leive, Legal Advisor to INTELSAT (Dec. 13, 1984) (available at FCC Docket No. 84-1299) [hereinafter Arnold & Porter Letter]. The Vienna Convention is widely recognized, even by non-parties such as the United States, as the definitive statement of international law on the question of treaty interpretation. Letter by Wiley & Rein to David Leive, Legal Advisor to INTELSAT (Dec. 19, 1984) (available at FCC Docket No. 84-1299) [hereinafter Wiley & Rein Letter]. A plain reading of article V(d) of the INTELSAT Agreement prohibits geographic price differentials for the same service. Vienna Convention, *supra*, art V(d). Article V(d) of the INTELSAT agreement expressly prohibits discounts of service pricing for one type of customer while other customers pay higher prices for the same service. Article V(d) states definitively that "the rates of space segment utilization shall be the same for all applicants for space segment capacity for that type of utilization." *Id.*

Article 31(2) of the Vienna Convention also provides that the ordinary meaning given to the terms of a treaty should be derived from the context of its preamble, annexes, and related agreements. *Id.* art. 31(2). The Preamble of the INTELSAT Agreement and the Agreement establishing Interim Arrangements state the purposes and intentions of INTELSAT signatories to prohibit price discrimination on the bases of types of users, cost efficiency, or geographic location. INTELSAT Agreement, *supra* note 9, at preamble. *See also* G.A. Res. 1721, 16 U.N. GAOR Supp. (No. 17) at 6-7, U.N. Doc. A/5100 (1962) (setting forth the principle that communications by means of satellites should be available to the nations of the world on a global and non-discriminatory basis); Agreement Establishing Interim Arrangements, *supra* note 6, at preamble (recalling that communications by satellite require a non-discriminatory availability among nations).

The Vienna Convention further provides that "all involved parties to a treaty respect any subsequent practice in the application of the treaty which establishes the agree-

and adapt new services to the market in answer to the threat of competitors.⁶⁹ The classification of these new services, however, must rely on bona fide technical or operational factors as distinguished from other types of utilization.⁷⁰ Should INTELSAT, in an attempt to fully meet the challenge of private competitors, establish some pricing flexibility among customers based on geographic location or on efficiency-of-use basis, it would violate article V(d).⁷¹ INTELSAT may offer new services at competitive rates only as long as high density customers buy the new services.⁷² Once customers in low density areas begin to request the new services, then the costs to INTELSAT for providing those services will rise.⁷³ The price increases will inflate charges to high density customers and open price gaps, thereby enabling competitors to offer services at market rates which undersell INTELSAT.⁷⁴

V. A PROPOSAL FOR AN AMENDMENT TO ARTICLE V(d)

A. THE PUBLIC SWITCHED-MESSAGE MARKET

While various groups and individuals have recognized the necessity for price flexibility,⁷⁵ the extent of price flexibility in INTELSAT still requires definition. In response to the concerns of the other investors to INTELSAT regarding separate systems, the United States delegation to the 16th Meeting of INTELSAT Signatories assured the other members that the United States would not propose a separate system under article XIV(d) if it believed that the introduction of separate systems would cause significant economic harm to INTELSAT.⁷⁶ The United States delegation also stated that the separate system would not subject the core of INTELSAT revenues to diversion⁷⁷ because the

ment of the parties regarding its interpretation. . . ." Vienna Convention, *supra*, art. 31(3)(b).

Since 1973, the Board of Governors has interpreted the phrase "type of utilization" in article V(d) to mean different types of services or service offerings, without application to the specific links or users. Arnold & Porter Letter, *supra* at 7.

69. See *supra* notes 66-67 and accompanying text (discussing flexibility in establishing new services).

70. Wiley & Rein Letter, *supra* note 68, at 6.

71. See *supra* note 68 and accompanying text (discussing limitations on pricing flexibility).

72. *Id.*

73. *Id.*

74. *Id.*

75. See *supra* note 62 and accompanying text (listing proponents for price flexibility).

76. INTELSAT, Press Release No. 86-21 (Apr. 10, 1986) [hereinafter INTELSAT, Press Release No. 86-21].

77. *Id.*

United States imposed operational restrictions under the FCC Order creates only a limited area of competition between INTELSAT and the separate systems.⁷⁸ Under service restrictions imposed by the FCC Report and Order, INTELSAT will retain complete control over the public switched-message markets.⁷⁹ The restrictions prohibit competitor systems from providing traditionally public services, allowing INTELSAT to maintain price averaging without the threat of traffic diversion to the separate systems.⁸⁰ Thus, within the public markets, services among high-density, cost-efficient areas can subsidize services to low density, cost-inefficient areas and preserve telecommunications markets in LDCs.⁸¹

B. DISTINGUISHING THE NO-INTERCONNECTION RESTRICTION

Under the FCC restriction, separate satellite systems may only provide services through the sale or long-term lease of space segment capacity for communications not interconnected with the public switched-message networks.⁸² The FCC requires that all separate systems licenses place the "no-interconnection" restriction in all lease agreements

78. *Id.*

79. See FCC Report and Order, *supra* note 49, at 42,287 (describing public switched-message networks as facilities established by international common carriers to provide public switched-message service, such as MTS, telex, TWX, telegraph, teletext, facsimile, and high-speed switched data services).

80. *Id.* at 42,282-42,292.

81. *Id.* at 42,306 n.139.

82. See *id.* at 42,287-88 (stating that the intent of the restrictions is to prohibit licensees of separate systems from operating as common carriers); Presidential Determination No. 85-2, at 46,987 (directing the Secretaries of State and Commerce to inform the FCC of the necessary criteria to ensure that the United States fulfills its international obligations and pursues its foreign policy and telecommunications interests). The Secretaries of State and Commerce stated that each system may only provide services through the sale or long-term lease of transponders or space segment capacity for communications not interconnected with the public-switched message networks, except for emergency restoration service. *Id.* One or more foreign authorities shall authorize the use of each system and enter into consultation procedures with the United States under article XIV(d) of the INTELSAT Agreement to ensure technical compatibility and avoid significant economic harm to INTELSAT. Letter from Malcolm Baldrige and George P. Shultz to Mark S. Fowler (Nov. 28, 1984) (FCC Docket No. 84-1299).

The FCC adopted further restrictions on separate systems as follows: 1) all licensees would restrict alternative systems to the sale or long-term lease of transponders or space segment capacity for communications not interconnected with public switched message networks, except for emergency restoration; 2) these restrictions will apply to separate systems operators as well as all levels of retailers and users of facilities; 3) the minimum lease period for the "long-term lease" of capacity will be one year; 4) common carriers and enhanced service providers may obtain and resell space segment capacity for communications not interconnected with any public switched-message network. FCC Report and Order, *supra* note 49, at 42,267, 42,282, 42,289.

for space segment capacity and in sales contracts for the purchase of transponders.⁸³ The FCC is able to effectively enforce the "no-interconnection" restriction through its monitoring of annual international traffic data submitted by United States carriers.⁸⁴ Any significant reduction in expected traffic levels between the United States and countries served by the separate systems would indicate the possibility of restriction violations.⁸⁵ The FCC will also apply the "no-interconnection" restriction to foreign use of separate systems.⁸⁶

The FCC's "no-interconnection" restriction provides an effective distinguishing line for a pricing flexibility amendment. This is so because all services associated with the public switched-message network could remain price inflexible without the danger that separate systems might

83. FCC Report and Order, *supra* note 49, at 42,267. *See also* INTELSAT, Press Release No. 86-21, *supra* note 76, at 2-5 (available at INTELSAT) (citing detailed responses by the United States Delegation to questions raised on separate systems). The FCC has emphasized that all licensees have the responsibility of ensuring that their systems are used in compliance with the operating restrictions. *Id.* at 2. Failure to operate pursuant to the restrictions subjects licensees to revocation of licenses, monetary fines, and other penalties. *Id.* Authorization of United States common carriers to provide services is conditioned on compliance with the "no-interconnect" restriction and will require tariffs to impose the restriction on customer use. *Id.* If carriers violate the restrictions they cannot use the separate system. *Id.* Violation of the tariff restriction by users will result in loss of service. *Id.* Users who resell separate systems capacity as enhanced service providers to customers entering into sharing arrangements for separate systems capacity must maintain written agreements that explicitly preclude interconnection and must file them with the FCC. *Id.* at 3.

All users which interconnect their separate system facilities to a private branch exchange (PBX) or similar equipment are required to configure their equipment to block on-demand connections with the public switched-message networks. *Id.* Each user must file a written certification sworn by a corporate official to the FCC expressing adherence to the no-interconnection restriction. *Id.*

84. INTELSAT Press Release No. 86-21, *supra* note 76, at 4; *see* Comments of International Satellite Inc., *supra* note 61, at 80, 81 (asserting that the affected parties would honor the proposed restrictions because massive violations are easily detected); Comments of World Communications Inc., In the Establishment of Satellite Systems Providing International Communications, at 5-7, FCC Docket No. 84-1299 (Apr. 1, 1985) (arguing that the conditions barring separate systems from the provision of public-switched message services are legally justifiable and enforceable); Reply Comments of Pan American Satellite Corp. at 17-18, In the Matter of Establishment of Satellite Systems Providing International Communications, FCC Docket No. 84-1299 (June 5, 1985) (arguing that the restrictions are enforceable because they will limit the number of users of the new market entrants and that regulatory expertise is sufficiently sophisticated to guard against violations).

85. INTELSAT Press Release 86-21, *supra* note 76, at 4. Due to its economic incentive as a competitor of separate systems, AT&T is an effective monitor of restriction violations. *Id.* AT&T can identify decreases in high density use of INTELSAT through its billing records, which the Commission can then cross-check with its certification file to uncover violators. *Id.*

86. *Id.* at 5. The FCC stated it would require that all operating agreements entered into between separate system licensees and foreign authorities contain language upholding the no-interconnection restriction. *Id.*

divert the high density traffic.⁸⁷ Conversely, price flexibility could extend to newer customized services not interconnected with the public switched-message networks to meet the challenge of competition in this specified area.⁸⁸

Other members of INTELSAT suggest that an amendment to article V(d) is not necessary because there are, as of mid-1986, no established separate systems.⁸⁹ Such a position provides the opportunity for separate systems to enter the market and calls for increased INTELSAT pricing flexibility only after the competitors have gained hold. Rather than postponing a modification until it faces actual competition, the better approach would adopt an amendment now to meet the threat of competition and to preclude the establishment of separate systems.

VI. NEED FOR GREATER FLEXIBILITY IN THE DEVELOPED WORLD

A. THE EUROPEAN NEED TO PREVENT DIVERSION OF REVENUE FROM INTELSAT

The Post, Telegraph, and Telecommunications Ministries (PTTs) are the dominant regulatory powers in European telecommunications.⁹⁰ Until recently, European PTTs have had almost exclusive control over the operation of domestic and international telecommunications.⁹¹ The PTTs have a strong interest in a modification of article V(d) that

87. See *supra* note 82 (noting that the FCC restricts separate systems to provision of services not interconnected with the public switched-message network). The Board of Governors would retain the ability to set the charges for the utilization of each service within the parameters set forth in articles V(d) and X. INTELSAT would offer public switched-message networks and all services interconnected with them at the same rates for utilization between all customers on a non-discriminatory basis. See INTELSAT Agreement, *supra* note 9, art. V(d) (establishing that all users shall pay the same rate). *But see* Comments of Abbott Washburn, *supra* note 9, at 15-16 (warning that the FCC must define the term "customized services" with precision so as to limit its scope).

88. See Hinchman Comment, *supra* note 39, at 16 (noting that where INTELSAT is allowed to set prices competitively, its vast economies of scale would render it a formidable rival). Whereas competitors are restricted to offering services of this nature, permitting INTELSAT to offer the same services at purely market rates provides INTELSAT the advantage of preempting the market before competitors can gain hold and damage INTELSAT's exclusive control over these crucial markets. *Id.* An amendment to article V(d) that allowed INTELSAT to price competitive services not interconnected with the public switched-message network would effectively preclude the establishment of separate systems.

89. *Global Salesmanship*, *supra* note 10, at 34.

90. See Rein, *supra* note 53, at 474 (noting that PTTs have regulatory power similar to the FCC and operating authority comparable to United States private sector licensees).

91. *Id.* at 475 n.73.

would grant greater price flexibility as a means of preventing the diversion of high density traffic and revenues which would accompany the establishment of separate systems. The PTTs are the Signatories to the INTELSAT Agreement on behalf of their respective countries and would suffer from any economic losses to INTELSAT.⁹² INTELSAT, which has no autonomous identity, acts as the agent of the Signatories which owns and operates satellites on their behalf.⁹³ The Signatories contribute the operating costs for the network, bear the risk of investment, and hold the primary responsibility for marketing the services of INTELSAT directly to customers.⁹⁴ Revenues of INTELSAT are in the form of INTELSAT Utilization Charges (IUCs)⁹⁵ which are assigned to the Signatories.⁹⁶ The Signatories recover their contributions only if actual demand equals or exceeds the demand projected at the beginning of the planning period.⁹⁷ If INTELSAT's revenues are insufficient, then the signatories are not fully reimbursed for their contribu-

92. See *id.* at 484-86 (noting that the PTTs, like COMSAT, are the investor/owners of INTELSAT). Each Signatory shall have an investment share in the use of INTELSAT space segments which is determined by its own use of INTELSAT capacity relative to use by other members. INTELSAT Agreement, *supra* note 9, art. V(d). Each member, therefore, is harmed by lower levels of utilization of capacity. Economics of Communications, *supra* note 54, at ii. The PTTs perceive the introduction of separate systems as an economic threat and a threat to their operational sovereignty. Sarreals, *supra* note 5, at 302 n.210.

93. Sarreals, *supra* note 5, at 285. INTELSAT provides the capacity that Signatories can use jointly for the purposes of routing traffic between and among their respective networks. Economics of Communications, *supra* note 54, at ii.

94. Sarreals, *supra* note 5, at 285. See Colino, *INTELSAT: Doing Business in Outer Space*, 6 COLUM. J. TRANSNAT'L L. 17, 53 (1967) [hereinafter *Doing Business in Outer Space*] (discussing the manner in which capital operating maintenance and administrative costs are divided between owners and users).

Signatories make annual contributions to INTELSAT proportional to their utilization of the system and based on projected costs of providing services for the upcoming planning period. Sarreals, *supra* note 5, at 295.

95. Sarreals, *supra* note 5, at 285.

96. *Id.* at 286. INTELSAT deals directly with its Signatories. *Id.* The Signatories then pass the overall costs to their customers. *Id.* The customers of the Signatories ultimately absorb any economic harm suffered by INTELSAT. *Id.* INTELSAT retains only the amount required to cover operation and maintenance expenses. *Id.* at 286. INTELSAT returns the surplus revenue to the signatories in proportion to their ownership and usage. *Id.*

97. *Id.* at 295. Typically, INTELSAT retains a surplus in space segment capacity because it allows excess capacity to remain available for immediate switching to prevent interruption if circuits in usage malfunction; and surplus often results from poor planning. *Id.* at 296 n.169. The inherent lumpiness of capacity additions compared to gradual changes in demand, the loss of capacity due satellite relocations, and the universal connectivity requirement of services are other reasons why total capacity exceeds usage. Economics of Communications, *supra* note 54, at iv. The connectivity requirement necessarily entails replacing older satellites with higher capacity satellites before the expiration of the usable capacity of the older satellites. *Id.*

tions and bear the resulting loss.⁹⁸

B. TELECOMMUNICATIONS CHANGES IN THE DEVELOPED WORLD

The price averaging practice of the INTELSAT network compels those signatories who utilize the most advanced and dynamic technology to subsidize the least efficient users of those services.⁹⁹ Consequently, the high cost of telecommunications in the least developed and most isolated regions of the world impedes the growth of state-of-the-art international telecommunications services. President Reagan's determination that separate satellite systems are in the national interest of the most advanced user of INTELSAT, the United States, indicates that the INTELSAT pricing system is presently insufficient for optimal growth in the most advanced nations. Elsewhere in the developed world and the industrializing countries, emerging forces are pressuring for liberalization, privatization and competition in telecommunications. Although the FCC authorized the original six proposed separate systems, implementation has yet to take place. New pressures from the developed world, however, may soon produce new competitors to INTELSAT.

1. *The British Prototype*

The approach of the United Kingdom typifies the future of telecommunications policy in the developed world. In the United Kingdom, the British Post Office (BPO) had traditionally monopolized telecommunications services and equipment.¹⁰⁰ The British government, in July 1980, however, announced plans to terminate the telecommunications monopoly of the BPO.¹⁰¹ The British Telecommunications Act of 1981¹⁰² created the British Telecommunications Corporation (British Telecom or BT) as a new public corporation to handle the telecommunications and data processing business of the BPO.¹⁰³ Forms of compe-

98. Economics of Communications, *supra* note 54, at iv. See *Doing Business in Outer Space*, *supra* note 94, at 53 (noting that INTELSAT Signatories must meet the operating, maintenance, and administrative costs of the space segment, if IUC revenues are insufficient).

99. See INTELSAT Agreement, *supra* note 9, art. V(d) (mandating that all customers pay the same costs for using telecommunications services).

100. Markoski, *supra* note 32, at 294 n.28. The United Kingdom played a key role in the establishment of INTELSAT and had a 12.9 percent ownership interest in INTELSAT as of 1985. Colino before Parliamentary Committee, *supra* note 22, at 2.

101. Markoski, *supra* note 32, at 294 n.28.

102. British Telecommunications Act, 1981, ch. 15, *reprinted in* 51 HALSBURY'S STATUTES OF ENGLAND 1812-13 (3d ed. 1981).

103. *Id.* (noting that British Telecom is a Recognized Private Operating Author-

tion between INTELSAT and British Telecom, however, were still limited in the United Kingdom as of 1985.¹⁰⁴

A turning point in British telecommunications policy occurred in 1982, when the European Commission found British Telecom guilty under the European Economic Community Treaty for abusing its dominant position in the British telecommunications industry because it prevented private message-forwarding agencies in the United Kingdom from relaying telex messages between the United Kingdom and other countries.¹⁰⁵ The decision of the Commission protected consumers against the obsolescence of such services¹⁰⁶ and effectively liberalized telex interconnections in the United Kingdom.¹⁰⁷ Application of the EEC Treaty to the British Telex monopoly threatens similar applications elsewhere in European Common Market countries.¹⁰⁸

The United Kingdom is already far advanced in the process of dereg-

ity). See *European High Court Antitrust Rulings Presage Telecom Liberalization and De-regulation*, 3 INT'L NETWORKS 1, 3 (Dec. 20, 1985) [hereinafter *European Antitrust Rulings*] (discussing the competitive effects of European judicial antitrust rulings on PTTs).

104. Rein, *supra* note 53, at 475 n.73. In 1979, the United Kingdom approved the use of foreign telephones, modems, and other equipment previously obtainable only through the BPO. Pantages, *Telecom Monopoly Weakening*, DATAMATION, Oct. 1979, at 78. As of 1981, some believed that the United Kingdom would adopt open market policies. Markoski, *supra* note 32, at 294 n.30. See *British Telecommunications Act*, 1981, ch. 15, reprinted in 51 HALSBURY'S STATUTES OF ENGLAND 1810 para. 13 (3d ed. 1981) (granting licenses to competitors if they did not infringe the telecommunications privileges of British Telecom). British Telecom retained the exclusive privilege of running the telecommunications systems. *Id.* at 1809-10 para. 12.

105. *British Telecommunications Found Guilty of Abusing Dominant Position* [1982-84 Transfer Binder] Common Mkt. Rep. (CCH) ¶ 10,433, at 10,979 (1982) [hereinafter *British Telecom Found Guilty*]. The Commission held that "Article 86 of the EEC Treaty prohibits as incompatible with the Common Market any abuse by one or more undertakings of a dominant position within the Common Market, or in a substantial part of it, in so far as such abuse may affect trade between Member states." *Id.* See also *European Antitrust Rulings*, *supra* note 103, at 2 (discussing the EC ruling).

106. *British Telecom Found Guilty*, *supra* note 105. The EC held that when a Member state with a dominant position takes measures to maintain an obsolete system, it violates article 86(b) of the (EEC) Treaty of Rome by limiting technical development to the ultimate prejudice of its consumers. *Id.*

107. *European Antitrust Rulings*, *supra* note 103, at 1.

108. See *Treaty Establishing the European Economic Community*, Mar. 25, 1957, 298 U.N.T.S. 11, art. 90(2) (providing that undertakings entrusted with the operation of services of general economic interest or having the character of a revenue producing monopoly are subject to the rules contained in the EEC Treaty).

In 1985, the European Court of Justice upheld the decision of the European Commission against British Telecom in *Italy v. Commission*. *Italian Republic v. Commission*, [1983-1985 Transfer Binder] Common Mkt. Rep. (CCH) ¶ 14,168 (1985). The Court ruled that government-sanctioned monopoly practices may conflict with the anti-trust prohibitions of article 86 of the EEC Treaty. *Id.*

ulation and liberalization of telecommunications.¹⁰⁹ Some believe that the United Kingdom is the most likely foreign authority to agree to FCC separate systems.¹¹⁰ England has also liberalized the supply of telecommunications equipment and the provision of value-added services.¹¹¹

Large corporate users in the United Kingdom are the primary beneficiaries of new and better services at lower prices resulting from increased competition.¹¹² The new services, such as videotext, remote database access, electronic mail, and data interchange give business users competitive advantages and alter the nature of business transactions.¹¹³

109. *High Tech Must Bring Deregulation*, 63 INT'L PRESS TELECOMMUNICATIONS COUNCIL, Mar. 1987, at 22 [hereinafter *High Tech Must Bring Deregulation*].

110. Caplan, *supra* note 2, at 182. Italy and Portugal may also favor separate satellite systems. *Id.* The United Kingdom and the United States have commenced their first transatlantic exchange of high-speed digital channels through earth stations that their respective INTELSAT signatories do not directly own. Colino before Parliamentary Committee, *supra* note 22, at 2. International Relay, Inc. of the United States and Cable and Wireless' Mercury Communications of Great Britain are establishing direct communication links between New York and London. *Id.* Richard Colino has described this activity as a seemingly competitive trend that is consistent with the INTELSAT Agreement. *Id.*

111. Pattie Address, *supra* note 1, at 3. Mercury Communications, a subsidiary of Cable & Wireless, is competing with British Telecom in England's new era of open market communications, offering the first alternative telephone service in the United Kingdom. *Mercury Competing Worldwide*, 62 INT'L PRESS TELECOMMUNICATIONS COUNCIL, Oct. 1986, at 35.

Mercury first offered its cheaper, superior quality service to business users, and then expanded service to residential customers as of 1986. *Id.* Customer savings on selected international routes are expected to average up to 24 per cent. *Id.*

Mercury, now an established international carrier, contracted with AT&T to operate a British-American international switched telephone service. *Id.* Mercury has joined British Telecom in providing a wholly digital network. Pattie Address, *supra* note 1, at 5. Similar to its agreement with AT&T, Mercury has entered into a contract with ITT World Communications and others to provide private leased circuits via satellite for transatlantic voice and data communications. *Id.* Mercury also offers a transatlantic electronic mail system allowing United Kingdom customers to communicate with over 150,000 American correspondents. *Id.*

Britain now offers its first satellite system, UNISAT, launched in 1986. SENIOR INTERAGENCY GROUP, *supra* note 4, at 25. UNISAT provides domestic television transmission and certain international commercial services through a beam that covers the United States eastern seaboard and most of Western Europe. *Id.*

112. Pattie Address, *supra* note 1, at 4-5. The new integrated digital exchanges of British Telecom can connect voice and data to users at the same time or can switch from one to the other midway through a phone call. *Id.* The new exchange systems can connect users in the major United Kingdom business centers with advanced network services, including text, fast facsimile, picture videotext, graphics and slow-scan television. *Id.* Moreover, British Telecom has expanded its high speed international satellite links. *Id.*

113. *Id.* at 6. The United Kingdom has more than 200 value-added network service (VANS) providers offering more than 800 different services, which expands the total

The United Kingdom has advanced substantially in implementing competition in telecommunications during the 1980s.¹¹⁴ Internationally, the United Kingdom has liberalized its end of all international circuits with a new value added and data services license.¹¹⁵ Thus, the United Kingdom service providers can offer any value-added or data service over lines leased internationally.¹¹⁶ The benefits to consumers of the changes in Britain are great because competition forces telecommunications suppliers to meet market demands more effectively.¹¹⁷ Whereas in previous years the development of services was always supply-led, it is now demand-led in Great Britain.¹¹⁸

2. *New Trends in Europe*

The European PTT administrations are still monopoly oriented, but sole allegiance to the PTT administrations in their own countries is softening.¹¹⁹ The countries of the European Community are under great pressure to deregulate.¹²⁰ The introduction of competition in Great Britain has increased demands for competition in international services throughout the rest of Western Europe, at first spawning price competition, then spreading to require increased service differentiation.¹²¹ The dominant position of the PTTs is slowly eroding as the

United Kingdom VANS market to an estimated £100-£200 million and promises to make the United Kingdom VANS market one of the future world leaders. *Id.* at 5. By improving global data communication and sophisticated electronic trading, VANS have advanced London's role in world financial markets. *Id.* at 6. Through VANS, a sender can deliver messages from computer to computer through the telephone network. *New Lines for Old*, *ECONOMIST*, Oct. 23, 1987, at 5 [hereinafter *New Lines for Old*].

114. Pattie Address, *supra* note 1, at 2-3. The United Kingdom approach has become "the vanguard of change, from the old monopolistic approach to one which is unashamedly one of liberalization and increased competition." *Id.*

115. *Id.* at 6-7.

116. *Id.* These services are subject to bilateral agreements with other countries. *Id.* Current bilateral discussions center on the establishment of these services between the United Kingdom, the United States, and Japan. *Id.*

117. *Id.*

118. *Id.* at 2.

119. *High Tech Must Bring Deregulation*, *supra* note 109, at 22. *See also European Antitrust Rulings*, *supra* note 103, at 7 (noting that ruling political parties ranging from West German, Dutch, and Belgian conservatives to French and Italian socialists have adopted policies for the liberalization of telecommunications).

120. *France Goes Ahead in Europe's Telecoms*, 62 INT'L PRESS TELECOMMUNICATIONS COUNCIL, Oct. 1986, at 44 [hereinafter *France Goes Ahead in Europe's Telecoms*]. For example, before the United Kingdom deregulated, regulations handicapped British firms and prevented them from obtaining such services that would enable computers to dial telephone numbers by themselves, and other features considered standard elsewhere. *Id.*

121. Coustel, *Telecommunications Services in France*, 10 TELECOMMUNICATIONS POL'Y 229, 234 (Sept. 1986). *See European Antitrust Rulings*, *supra* note 103, at 136

need for privatization and competition gain recognition.¹²² Telecommunications providers around the world are similarly realizing the pressures for liberalization.¹²³

(stating that the need for hard cash from private industry to modernize adds impetus to the pressure for liberalizing policies).

122. See *Dutch PTT Goes Private*, 63 INT'L PRESS TELECOMMUNICATIONS COUNCIL, Mar. 1987, at 19 (noting that the Netherlands announced the privatization of the Dutch PTT, to the Tariffs and Facilities Committee in October of 1986 partially in response to anti-monopoly legislation of the EEC).

The privatization announcement of the Netherlands caused alarm in the Deutsche Bundespost, the German PTT. *Id.* Even though the Bundespost, remains publicly owned, it also faces the possibility of privatization. *Id.* In response to this challenge, twenty thousand members of the German Postal Union held a protest meeting in Cologne against alleged government plans to sell profitable parts of Germany's telecommunications and telephone authority to private business. *Id.* Following the decision of the European Court of Justice in *Italy v. Commission*, the Bundespost withdrew regulations that would have extended its monopoly to cordless telephones. The Bundespost had previously relinquished its express mail monopoly after an earlier EEC proceeding, *European Antitrust Rulings*, *supra* note 103, at 1.

The dominant position of the Bundespost is potentially open to a challenge by the European Commission as a result of an experiment it undertook in October 1986. *Test Could Mean Roof Dishes For Germany*, 63 INT'L PRESS TELECOMMUNICATIONS COUNCIL, Mar. 1987, at 21. The experiment sought to attract custom satellite communications that could lead to the establishment of 400 or 500 receive-only earth stations in Germany. *Id.* The conservative position of the Bundespost, which seeks to retain total control over the provision of satellite services and ground terminals, has thwarted the potential success of the experiment. *Id.* Consequently, should the Bundespost severely obstruct these new services, it could result in an adverse European Commission decision, finding the maintenance of obsolete services to the detriment of customers to be an abuse of the Bundespost's dominant position.

In France, the Direction Generale des Telecommunications (DGT) is the only authorized provider of public telecommunications services, apart from Telediffusion de France (TDF). Coustel, *supra* note 121, at 233. The PTT of France has harmonized the policies of DGT and TDF. *Id.*

Although France is unlikely to privatize its PTT, the Minister of Posts and Telecommunication will probably impose deregulation of advanced value-added services, video texts, and private business networks. *France Goes Ahead in Europe's Telecoms*, *supra* note 120, at 44. The reduction of the monopoly of the DGT is likely to transform DGT into a state service. *Id.* The Ministry of Industry would then assume DGT's responsibility for the telecommunications and electronics industry. *Id.*

France has already opened certain segments of the telecommunications market to competition including the installation of customer premises and terminal related equipment, such as answering devices, modems, sophisticated telephone terminals, and telex terminals. Coustel, *supra* note 121, at 233. Newly opened markets relate to business communication needs, including local networks, and private automatic branch exchanges linked to the public network. *Id.*

The French Company Compagnie General d'Electricite, merged with the European and worldwide branches of International Telephone & Telegraph to form the second largest equipment business in the world after AT&T. *France Goes Ahead in Europe's Telecoms*, *supra* note 120, at 44. Mergers like this one will allow Europe to compete more effectively against Japan and the United States for the revolutionizing telecommunications market. *Id.*

123. See *Malaysia Moves to Privatization*, 14 COMMUNICATIONS INT'L, Feb. 1987, at 4 (noting that Syarikat Telekom Malaysia (STM), a private limited company, will

Europe has begun to undergo the process of modernizing its telecommunications.¹²⁴ The European Commission prepared a "Green Paper"¹²⁵ on the implementation of a Common Market for telecommunications.¹²⁶ The primary goals of the Green Paper are to work toward a European-wide market for value-added services and terminals, and to maintain and strengthen the future telecommunications infrastructure.¹²⁷ The Green Paper expresses the need for the European Commu-

subsume national communications previously provided by Jabatan Telekom Malaysia, a state organization); Markoski, *supra* note 32, at 294 n.30 (noting that Canada has attempted to promote competition in the telecommunications industry and has authorized the joinder of the Canadian National/Canadian Pacific network to Bell's Canadian network); *Projects Multiply as Freedom Boosts Japan's Telecoms*, 62 INT'L PRESS TELECOMMUNICATIONS COUNCIL, Oct. 1986, at 8 (noting that Nippon Telegraph and Telephone Public Corporation (NTT), the Japanese telecommunications carrier, became the largest stock holding company in Japan). The Japanese international carrier, Kokusai Denshin Denwa Co. Ltd., is already private. Markoski, *supra* note 32, at 294 n.29. Foreign companies are also making some inroads to Japan. *Id.* For example, International Business Machines is involved in a joint venture with NTT to provide a data-communications network over NTT lines. *Id.*

124. *High Tech Must Bring Deregulation*, *supra* note 109, at 22 (explaining that considerable European investments in digital telecommunications technology are rapidly changing the analog infrastructure and improving the efficiency and quality of existing services, while supporting the provision of new services). The PTTs seek expansion through increasing digitization of the telecommunications infrastructure, network integration, and new services such as cellular radio, videotext, Integrated Services Digital Networks (ISDN—a new public switched telephone standard), broadband communications, private-voice and non-voice networking. *Id.* By 1990, EUTELSAT and INTELSAT satellites will carry approximately 55 channels suitable for European television distribution. *Id.* Societe Europeene des Satellite's Astra of Luxembourg, Telecom 1 of France, and Kopermikus of West Germany, along with a number of broadcast satellites, will provide additional television capacity. *Id.* Moreover, the EC countries have agreed to a process of "homologation," that is, equipment approved for the network in one country can be used in other EC countries. *New Lines for Old*, *supra* note 113, at 25.

125. *Green Paper on Europe*, 63 INT'L PRESS TELECOMMUNICATIONS COUNCIL, Mar. 1987, at 13 [hereinafter *Green Paper*]. The Green Paper follows the guidance of article 2 of the Treaty of Rome and recommends the implementation of the future provision of community-wide services and European-wide connectivity. *Id.*

126. *Id.* See also *New Lines for Old*, *supra* note 113, at 27 (stating that European countries reached an agreement in May 1987 to set a European standard for digital mobile communications). This standard will improve the competitive stance of European manufacturers and at the same time increase their market share. *Id.*

127. *Green Paper*, *supra* note 125, at 13. One purpose of European harmonization of telecommunications is to develop a solid domestic market base from which to compete with American and Japanese suppliers in world markets. *High Tech Must Bring Deregulation*, *supra* note 109, at 22. In 1986, the twelve member EC endorsed the coordination of ISDN services across the entire continent commencing in 1988. Belit-sos, *ISDN: Oceans Apart*, 3 NETWORK WORLD, Aug. 4, 1986, at 33 [hereinafter *ISDN: Oceans Apart*]. In another proposal, the European Commission established RACE (Research and Development in Advanced Communications technologies for Europe) to implement by the 1990s, a reference model for a standardized European public wideband, or "Eurogrid." *A Radical Proposal for Telecom Infrastructure from the EC*, 3 INT'L NETWORKS, Nov. 1, 1985, at 1. Full implementation of "Eurogrid" will

nity to develop a new framework that will accommodate evolution but that will preserve the major achievements of the past, such as the cooperation and international coordination of INTELSAT along the major traffic routes.¹²⁸ The Green Paper also stresses safeguarding the role of the telecommunications administrations in Europe in implementing more European-wide connectivity.¹²⁹

In recent years, governments have recognized the importance of maximizing growth in their telecommunications, computer, information, and aerospace industries.¹³⁰ For example, PTTs in industrializing and developing countries are buying the most sophisticated switching technology available.¹³¹ Nearly half the orders for the newest equipment will come from East Asia.¹³² In Europe, the European Community has recently encouraged the relaxation of government procurement policies to promote the Community as the leading supplier of global telecommunications needs.¹³³

require a total replacement of existing analog and the proposed PTT ISDN telecommunications plants. *Id.*

The harmonization of European telecommunications, however, must overcome several obstacles including widely differing objectives of the PTTs' plans and policies relative to tariffs, equipment purchases, and technical specifications. *High Tech Must Bring Deregulation, supra* note 109, at 22.

128. *Green Paper, supra* note 125, at 13. Recognition of the disadvantages of the fragmented United States telecommunications infrastructure reinforces European appreciation for the importance of coordination of the telecommunications revolution. *See ISDN: Oceans Apart, supra* note 127, at 1, 36 (noting that the lack of a centralized planning authority is causing difficulty in developing a conversion to ISDN).

129. *Green Paper, supra* note 125, at 13.

130. *See Hayes, South Korea Develops Telecoms Equipment Production*, 14 COMMUNICATIONS INT'L, Feb. 1987, at 18 (commenting that South Korea is beginning to export telecommunications equipment). Daewoo Telecom Company obtained a Philippine contract worth \$24 million to install digital exchange switching equipment capable of handling 40,000 phone lines. *Id.*

131. *Explosive Switching Growth for Developing Countries*, 14 COMMUNICATIONS INT'L, Feb. 1987, at 4. Although switching purchases only increased from \$1.4 billion in 1985 to \$1.5 billion in 1986, purchases in 1987 rose sharply to \$1.9 billion and are expected to jump to \$2.7 billion by 1990. *Id.* Pyramid Research of Massachusetts predicts that developing and industrializing countries will grow as much as 24 percent per year in the digital public switching area through the 1990s. *Id.*

132. *Id.* Countries like Singapore and South Korea are planning future conversion of their telephone networks to ISDN. *ISDN: Oceans Apart, supra* note 127, at 33. In Japan, the regulated quasi-monopoly, NT&T is promoting a similar ISDN network. *Id.* at 36.

133. Markoski, *supra* note 32, at 294 n.30. The European foresight of the world's explosive need for communication satellites inspired the establishment of European Ariane rockets to compete with NASA. Colino before Parliamentary Committee, *supra* note 32, at 6. The Ariane rockets will launch French, West German, and Scandinavian DBS satellites that use high power transponders to beam television signals to small domestic antennas. *Glut of Transponder Capacity*, 63 INT'L PRESS TELECOMMUNICATIONS COUNCIL, Mar. 1987, at 22.

While the United States and Great Britain are favoring the establishment of market forces in international satellite telecommunications, Japan and France are also introducing limited competition to their own domestic markets. The European Commission has begun to enforce antitrust clauses of the European Community Treaty. Jacques Dondoux, Director General of Telecommunications in the French PTT Ministry expressed concerns regarding the need for healthy competition and the opening up of European markets together with the need for greater cooperation to deter uncontrolled international deregulation.¹³⁴

VII. LESS DEVELOPED COUNTRIES PRESSURES TO LIMIT PRICE FLEXIBILITY

A. POTENTIAL HARM TO LOW DENSITY AREAS

INTELSAT seeks to achieve a global system which will expand services to all areas of the world and will contribute to world peace and understanding.¹³⁵ While a price flexibility amendment must foster maximum growth in the developed world to avoid harm to the PTTs, the amendment must also continue to serve the needs of LDCs.

Open market benefits of separate systems would favor high density countries such as the United States. Low density countries, however, would not reap the benefits of increased competition because competitor systems would seek markets only in high density routes.¹³⁶ Separate satellite systems providing routes between the high density users would divert the most important source of revenue for INTELSAT, increase the costs of INTELSAT space segment utilization,¹³⁷ and harm low density users disproportionately.¹³⁸ Yet, LDCs would incur harmful re-

134. Address by Jacques Dondoux, Financial Times Conference of World Telecommunications, reprinted in 61 INT'L PRESS TELECOMMUNICATIONS COUNCIL, Mar. 1986, at 6.

135. INTELSAT Agreement, *supra* note 9, at preamble.

136. See *New Lines for Old*, *supra* note 113, at 20 (noting that new entrants will compete for the most lucrative markets without an obligation to serve unprofitable sectors); see also Rein, *supra* note 53, at 481 (noting that separate systems will probably not offer services to low density areas due to the small profit opportunities that exist). Moreover, the PTT monopolies of the underdeveloped countries have not yet "marketized" large sectors of their countries. Snow, *supra* note 33, at 286.

137. See Rein, *supra* note 53, at 481 n.102 (noting that as high density revenues are lost to competitors, the cost of utilizing the INTELSAT network (IUCs) will spread to the remaining high and low-density customers).

138. W. Hinchman Assoc., International Satellite Competition Impact Analysis/scenario 4, FCC Docket No. 84-1299 (January 25, 1985). Analysts predicted in 1985 that if the proposed separate systems designed to provide service between the United States and Europe were implemented, INTELSAT would lose all United States-European voice circuits protected for use as record, data, or AVD circuits, thereby forcing significant increases in INTELSAT's annual costs per utilized transponder. W. Hinch-

sults should the proposed amendment give INTELSAT complete pricing discretion.¹³⁹ Unfettered INTELSAT price flexibility would cause great economic harm to underdeveloped countries and force them to either reduce or terminate their participation in INTELSAT.¹⁴⁰

man Associates, *The Economics of International Satellite Communications*, Summary Report, at 14, May 18, 1984 (FCC Docket No. 84-1299) [hereinafter *Economics of International Satellite*].

Because INTELSAT signatories are reimbursed on a pro rata basis on return from INTELSAT's revenues, failure to meet anticipated demand harms the signatories where traffic is lightest. Sarreals, *supra* note 5, at 229. For example, in the African region, 31 countries are members of INTELSAT and 50 countries use the INTELSAT network for the provision of international service. SENIOR INTERAGENCY GROUP, *supra* note 4, at 4. Many of these African countries use INTELSAT as the sole provider of domestic service. *Id.* The African member nations hold a 6.58 percent ownership investment interest in INTELSAT. Reply Comments of Transafrica, *supra* note 31, at 5. As a result, African nations would either bear a disproportionate percentage of the total cost increases or would be forced to withdraw from INTELSAT. *Id.* Even though African nations would carry an average of 1.83 times more of the cost burden than non-African nations, the increase to the sixteen smallest African INTELSAT members would result in a 3.26 times higher cost burden. *Id.*

This disproportionate burden on the smallest INTELSAT members results because article V(b) of the INTELSAT Agreement requires signatories to maintain a minimum investment share of 0.05%, even if they do not use INTELSAT service. INTELSAT Agreement, *supra* note 9, art. V(b). The sixteen smallest African INTELSAT members must maintain this minimum share which in 1984, required an annual investment of \$800,000. Comments of Transafrica, *supra* note 67, at 9.

139. See Comments of AT&T *supra* note 43, at 34 (conceding that de-averaging may cause prices in the low traffic routes to rise); Hinchman Comments, *supra* note 39, at 16 (stating that although INTELSAT would remain a formidable competitor should it become a strictly commercial enterprise, "thin routes" would still experience large cost increases due to INTELSAT's large economies of scale); see also Reply Comments of Transafrica, *supra* note 31, at 7 (stating that complete price flexibility, like the introduction of separate satellite systems, has the same adverse economic impact on the less developed countries). Low density countries have expressed concerns relating to the conversion of INTELSAT from a cost-sharing cooperative to a purely commercial enterprise. *Id.* To allay these fears, Colino has reassured LDCs that INTELSAT will remain a non-profit cooperative. *Global Salesmanship*, *supra* note 10, at 36.

140. Reply Comments of Transafrica, *supra* note 31, at 7 n.12. In the poorest nations, the demand for international telecommunications is highly price elastic. Letter of the East-West Institute of Culture and Communication to Secretary of the FCC, (Docket No. 84-1299) (Feb. 11, 1985), [hereinafter *East-West letter*]. As utilization costs increase, the demand for services decreases at a greater than proportional rate. Reply Comments of Transafrica, *supra* note 31, at 1. Increases in INTELSAT costs will probably postpone the investment of less developed countries in new international telecommunications facilities. *Id.* at 2. Reasons for high price elasticity in Africa include limited resources and budgets, lack of borrowing power found in developed and industrializing nations, low levels of disposable income of governments, businesses and consumers, and the high priority placed on the expansion of domestic services. *Id.* at 2, 9-10, 13.

Unlike developed countries which can turn to cables as a substitute for satellites, low density countries depend more heavily on satellites and cannot easily turn to undersea or land cables. *Id.* at 14.

The Sub-Saharan African telecommunications sector is the weakest in the world. Guttman, *supra* note 38, at 333. The Sub-Saharan region contains more than 8 percent

Telecommunications is vital for the structure and competitiveness of many businesses, and for the smooth flow of international commerce and trade.¹⁴¹ An efficient and commercially viable telecommunications system also stimulates greater participation of international organizations and financial institutions in addressing the problems unique to LDCs.¹⁴²

The increased costs of communications and diminished reliability of telephone service will serve to dissuade multinational corporations (MNCs) from investing in the poorest of countries. The MNCs will rechannel investment from LDCs to more developed and industrializing countries where communications and related services are available in a wider variety and better quality.¹⁴³ At the Ninth Meeting of the INTELSAT Assembly of Parties in January 1985, Zambia's representative referred to any discussion of shifting costs to developing nations as an "unwelcome burden for these nations which are already going through crippling economic difficulties."¹⁴⁴

In addition to harming the poorest nations, complete pricing flexibility or frequent traffic diversion would also severely harm the economies

of the world's population and less than 0.5 percent of the world's telephone lines. *Id.* at 326. Less than two of every thousand people have direct access to those lines. *Id.* Nigeria, the largest African INTELSAT investor, in 1981 had a population of seventy million served by only 175,000 telephones. Reply Comments of Transafrica, *supra* note 31, at 12. The high costs of domestic telephone service are due largely to the scarcity of traffic. *Id.* at 11-13. With few exceptions, a telecommunications exchange consists of a single local switch with under 5,000 lines. *Id.* Another reason for scarcity in traffic is the wide distances between the communication points served. *Id.* Broad global antenna beams are needed to reach a large portion of the African continent, while more cost effective spot beams prove useless. *Id.*

The highest priority of PTTs in African states is the extension of services to rural areas. *Id.* at 10-13. More than 80 percent of Sub-Saharan Africans live outside the major urban centers with access to only about 12 percent of the telephones. Guttman, *supra* note 38, at 332. For example, in the Ivory Coast, 90 percent of the country's telephones were in the city of Abidjan. *Id.* The Ivory Coast five year plan called for a threefold increase in the number of phones with the highest priority being the extension of service to the rural areas. *Id.*

Only seven of 42 African countries have access to Atlantic and Indian Ocean satellites of INTELSAT. Guttman, *supra* note 38, at 332. Thus calls to a majority of the globe require multiple hops, reducing transmission quality, ease of connection and increasing the costs. *Id.*

141. Pattie Address, *supra* note 1, at 2.

142. See Reply Comments of Transafrica, *supra* note 31, at 14 n.18 (noting that international satellite communications are essential to efforts similar to the provision of emergency food and medical aid to the famine victims of East Africa). The breakdown of a circuit results in long delays in the shipment and distribution of supplies to particular settlements and communities. *Id.*

143. Reply Comments of Transafrica, *supra* note 31, at 8. The LDCs could attempt to offset their diminished attractiveness to foreign investors, however, through the offer of better trade incentives and privileges. *Id.*

144. *Id.* at 7 n.12.

of the Pacific Island Nations (PINs).¹⁴⁵ Most obviously, any significant loss of Atlantic Ocean revenue would pressure INTELSAT to increase the costs for its Pacific Ocean users.¹⁴⁶ Such action would have disastrous consequences on the growth of commerce and Pacific markets for American exports.¹⁴⁷ Although the Pacific Ocean is rapidly becoming a higher density and thus a more desirable telecommunications market,¹⁴⁸ PINs continue to experience problems in telecommunications efficiency.¹⁴⁹

Telecommunications is a fundamental element in economic development.¹⁵⁰ For example, one study concluded that development of telephone systems in the poorer rural regions of the United States increased the local gross national product of these areas between six and seven times greater than the cost of their implementation.¹⁵¹

Developed countries have a great interest in the economic well-being of LDCs because the world has become increasingly economically interdependent.¹⁵² A price flexibility amendment tailored to prevent al-

145. East-West letter, *supra* note 140. Due to the limited economic development, small size, and vast geographic distances of the Pacific Island Nations, no plans exist for laying submarine cables. Comments of Hawaiian Telephone Co. at 2, In the Matter of Establishment of Satellite Systems Providing International Communications, FCC Docket No. 84-1299 (Apr. 1, 1985). Other types of transmission such as high frequency radio are unreliable. Moreover, many such islands have fragile economies and experience difficulty obtaining the necessary financial resources to develop their telecommunications infrastructures. *Id.* at 2-3.

146. *Id.*

147. *Id.*

148. *Pacific: The Ocean of the Future*, 61 INT'L PRESS TELECOMMUNICATIONS COUNCIL, Mar. 1986, at 8. Deputy Director General of INTELSAT, David Tudge, informed the Pacific Basin Information Industry Trade Mission and Conference that the Pacific Ocean Region not only expanded its lead over the Atlantic in annual volume of international trade by \$30 billion in 1985, but also expanded its use of INTELSAT, growing at an annual rate of 20%, which is far greater than any ocean region. *Id.*

149. East-West letter, *supra* note 140. PINs, less developed in economic terms, must also overcome the geographical obstacles of large clusters of numerous islands rendering undersea cable communications cost prohibitive. *Id.* PINs depend highly on INTELSAT to make their communications routes more efficient. *Id.*

150. Reply Comments of Transafrica, *supra* note 31, at 14 n.18 (citing Report of the Independent Commission for World-Wide Telecommunications Development: The Missing Link, Sir Donald Maitland, Chairman (ITU, January, 1985)). Sir Maitland established the Maitland Commission to develop a worldwide strategy for the development of telecommunications in the Third World. *Id.*

151. Jequier, *supra* note 2, at 84. *See also* Chu, *Rural Telephone in Indonesia and Thailand*, 9 TELECOMMUNICATIONS POL'Y 159, 163-64 (June 1985) (noting that the development of a telephone system in rural areas has had positive social effects, including greater worker productivity).

152. Colino, *Global Politics and INTELSAT*, 10 TELECOMMUNICATIONS POL'Y 195, 204-05 (Sept. 1986) [hereinafter *Politics and INTELSAT*]. This interdependence manifests itself in such tensions as access to world mineral resources, the impact of the developed world on the oil and mineral policies of the less developed nations, and the

ternate routing of high density traffic and resulting revenue loss to INTELSAT, while, at the same time, maintaining subsidies to LDCs is in the best interest of all users.¹⁵³

B. INTERSPUTNIK AND THE THIRD WORLD ALTERNATIVE

INTELSAT is considered one of the great achievements of American foreign policy.¹⁵⁴ The Kennedy Administration desired the establishment of a global communications satellite network as an attempt to compete with the Soviet Union for the allegiance of the emerging nations. The perception of the United States abandoning INTELSAT by allowing a multitude of private systems to flourish and perform all INTELSAT functions would harm United States diplomatic interests and credibility in LDCs.¹⁵⁵ Diminished international access through INTELSAT and apprehension of United States abandonment of its long-standing commitment to provide international telecommunications services could persuade less developed countries to turn to the Soviet INTERSPUTNIK system for the provision of services.¹⁵⁶

INTERSPUTNIK is a rival global system which the Soviet Union uses to supplant INTELSAT in some countries.¹⁵⁷ Until now, few countries have shown an interest in INTERSPUTNIK which is largely

impact of inflationary and disinflationary policies of developed nations on each as well as on the newly industrializing world. *Id.*

153. *Id.* at 206.

154. Colino before Federal Communications Bar, *supra* note 9, at 3. Former Chairman of the FCC, Abbott Washburn, referred to INTELSAT as comparable to the Marshall Plan, representing perhaps the greatest sharing of high technology known to man. *Id.*

155. Reply Comments of Transafrica, *supra* note 31, at 4.

156. *Id.* at 18; see Statement of Joel R. Alper, President of the World Systems Division of COMSAT before the House Subcommittee on Telecommunication and Finance on Energy and Commerce (July 26, 1984) (FCC Docket No. 84-1299) [hereinafter Alper Statement] (warning that a weakened INTELSAT and greater burdens on developing nations would make them more vulnerable to solicitations from the Soviets).

157. *Id.* In the mid-1970s, the Soviet Union announced plans for a seven satellite INTERSPUTNIK network. Only two were in operation in 1984. Shinn & Swensrod, *INTERSPUTNIK: Current Status and Future Options*, Georgetown University Center for Strategic and International Studies 1 (1984) (available at FCC Docket No. 84-1299) [hereinafter Shinn & Swensrod]. INTERSPUTNIK began its operations in 1971 with nine charter members: the U.S.S.R., Czechoslovakia, Poland, Hungary, Bulgaria, Rumania, the German Democratic Republic, Cuba, and Mongolia. *Id.*

INTERSPUTNIK leased transponders on three generations of elliptical-orbit Molniya satellites. *Id.* By 1979, INTERSPUTNIK began using four transponders of 120 circuits each on geosynchronous Gorizont satellites. *Id.* The Soviet Union has developed increasing technical and operational capabilities. *Id.* The Soviet deployment of a space shuttle and an operation Saturn V-class rocket enhance their communications capabilities. *Id.* This advanced technology increases their ability to place large payloads economically into geostationary orbit. *Id.* at 12.

limited to transmissions among Soviet client states.¹⁵⁸ Recent developments indicate, however, that the Soviet Union is preparing to take full advantage of diversification of the international satellite networks to increase its customer base.¹⁵⁹ Increased LDC usage of INTERSPUTNIK may effectively further the foreign policy interests of the Soviet Union.¹⁶⁰

INTERSPUTNIK is a highly subsidized and therefore cheaper, alternative to INTELSAT.¹⁶¹ INTELSAT, however, still offers many advantages over INTERSPUTNIK.¹⁶² Soviet satellite communications

158. *Politics and INTELSAT*, *supra* note 152, at 206. Since 1971, five countries have subsequently joined INTERSPUTNIK including Laos, Vietnam, Afghanistan, North Korea, and the People's Democratic Republic of Yemen. Shinn & Swensrod, *supra* note 157, at 2. In addition, Syria, Algeria, and Iraq use the network for communications with Moscow. *Id.* By 1984, earth stations were under construction in Angola and Libya. *Id.* at 3. In the Western Hemisphere, Nicaragua has an earth station, and the United States discovered an earth station under construction in Grenada during the United States invasion there in 1983. *Id.* at 2. Since 1980, INTERSPUTNIK has sought the additional membership of Yugoslavia, Sri Lanka, Mozambique, Syria, Algeria, Madagascar, and Brazil. *Id.* at 3.

159. Shinn & Swensrod, *supra* note 157, at 3. At the International Telecommunications Union, the Cubans have taken steps to obtain a spot over the Caribbean for INTERSPUTNIK. *Id.* at 11. The Cubans have indicated that they might use such a satellite to build a regional network. *Id.*

Soviet satellite communications developments improve its Intervision network by providing live or newfilm transmissions from Moscow at one-third the rates of INTELSAT; appealing to the LDC television market with one-way transmissions of sporting events, documentaries and academic courses to universities; and expanding international video conferencing. *Id.* at 7. INTERSPUTNIK may also attempt to establish point-to-point domestic communications links in LDCs for television, radio, facsimile, and telephone transmissions. *Id.* at 11.

160. *Politics and INTELSAT*, *supra* note 152, at 206. INTERSPUTNIK is currently the major vehicle for Soviet agitational and propaganda activities. *Id.* For example, INTERSPUTNIK carried free coverage of the Friendship Games in Moscow to its subscribers. *Id.* See also Shinn & Swensrod, *supra* note 157, at 4 (arguing that a larger INTERSPUTNIK system, coupled with the Soviet development of spot beams, could enable the establishment of secure and direct links to any member nation transmitting sensitive military communications in the event of a Soviet military undertaking). Conversely, the United States Department of Defense depends heavily upon INTELSAT as its principal or sole link to many LDCs. Alper Statement, *supra* note 156, at 12.

161. Shinn & Swensrod, *supra* note 157, at 3. In 1982, for example, INTERSPUTNIK charged \$11,615 for the lease of one voice circuit for one year, compared to INTELSAT, which charged \$19,358. *Id.* Earth station operations for a video channel cost \$383 for the first ten minutes and \$11 for each additional minute on INTERSPUTNIK, compared to \$968 and \$30 respectively, on INTELSAT. *Id.* As earth stations become smaller and cheaper, the Soviet Union may exploit the opportunities to donate them or supply them at subsidized costs. *Id.* at 10.

162. *Id.* at 4. INTELSAT's preemption in the international communications network has been the primary reason for foregoing INTERSPUTNIK. *Id.* Even the Soviet Union must resort to INTELSAT when it needs to communicate outside the limited INTERSPUTNIK network. *Id.* at 4. Moreover, whereas INTELSAT allows freedom in communications and encompasses many ideologies and varieties of political systems,

technologies still remain behind those of INTELSAT, but not so far behind that INTERSPUTNIK cannot exploit LDC dissatisfaction with INTELSAT and take advantage of opportunities for expansion.

CONCLUSION

Separate international communications systems currently face high barriers in entering the international satellite communications field. If the expanding demand for services is not met, however, or not met at a fair price, separate systems may soon become a reality. The amendment of article V(d) of INTELSAT is essential to stay this threat. The amendment must carefully redefine the pricing flexibilities of INTELSAT to enable LDCs to develop optimally.

The most effective modification to article V(d) would include the operational distinctions outlined in the FCC Report and Order. These operational distinctions would make INTELSAT competitive in the limited area open to separate systems, thus meeting the most dynamic marketplace needs while preserving the price subsidization provisions. Some measure of price averaging is necessary to maintain some degree of subsidization for low density countries. Such pricing flexibility fosters optimal economic growth in both LDCs as well as developed countries.

This rise in competition among domestic and international telecommunications systems ends the era of a single system assuming privileges and taking for granted its domination of markets. Increased competition encourages suppliers to develop a sense of market needs and rewards those who seize the initiative. A continuation of a monopolistic attitude inflates the price of state-of-the-art telecommunications, dampens demand and encourages the initiative for prospective competitors to enter the telecommunications market. An amendment to the INTELSAT Agreement providing for a tailored degree of pricing flexibility would eliminate private invasion of those areas most detrimental to the developing nations while ensuring the prominence in the market of international communications thus fostering optimal telecommunications and economic development throughout the world.