The Heavenly Realm of Regulation: What is the Outlook for DBS Now

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I. INTRODUCTION

SEVERAL YEARS AGO, the Federal Communications Commission (the "FCC" or "Commission") began a policy of deregulating the communications industry to accommodate new media forms and allow potentially unlimited expansion of the information market.¹ There were two reasons for the deregulation. The first reason, based on the United States’ policy of free market enterprise, was to encourage competition in the domestic market among communication enterprises.² Related to encouraging domestic competition is the goal of furthering the United States’ position in the international communications export market.³ The second reason for deregulation was to allow consumers to make more informed choices by in-


² Fowler, supra note 1, at 168.

³ Federal Communications Commission, Advisory Committee Report, ITU WARC ORB ’85 at 4-3, 4-4 (Dec. 1983) [hereinafter cited as First Advisory Report]. While the United States is a leader in the world market in export of communication equipment, international competition is fierce, especially from France, Germany and Japan. Id. In addition, the French have made great strides in the satellite launching business. Id.
creasing the available options. Deregulation resulted in new media forms: cable television, video cassette recorders, interactive computer systems, home satellite receiver dishes, and others. The domestic system of FCC deregulation is currently perceived as accomplishing the dual goals of increasing competition and promoting consumer choice.

To maximize the technological developments in communications, communications enterprises must pursue the international market. A low-cost method of providing instantaneous international communication became available in the 1960s with the international communications satellite. The global sharing of information is consistent with, and almost dictated by, the philosophy of the United States toward free enterprise and free flow of information. Since independent, sovereign nations compose the international market, the United States cannot establish international communication policy unilaterally.

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5 Media Policy Session, supra note 4, at 77.

6 Id. at 67; Fowler, supra note 1, at 168.


9 Fowler, supra note 1, at 168. COMSAT calls for the United States to establish a commercial satellite system in conjunction with other countries, paying particular attention to services to developing countries. 47 U.S.C. § 701(a), (b) (1982). For a complete list of treaties and other international agreements relating to United States radio, see 47 U.S.C. § 603 (1984).
goals underlying the FCC's domestic deregulation policy must be squared with the policies of other countries which are concerned about the potentially destructive effects of information crossing national borders and are advocating restrictions on transborder data flows.  

Nowhere is the debate over the economic, socio-cultural and political influence of communications in the international arena more apparent than in discussions of the Direct Broadcast Satellite ("DBS"), a dynamic communications device. DBS will be placed in a geosynchronous orbit 22,300 miles above the equator where it will receive transmissions from the programmer (the "uplink"), alter the frequency of the signal and amplify it, then transmit the signal back to earth (the "downlink") for direct reception by a home receiver, thus eliminating the need for retransmissions from a terrestrial station.

Because of the tremendous power of the DBS transmission, the area covered by the signal (the "footprint") is enormous, creating transnational overspill. The ability to transmit transnational broadcasts, without filtering through a nation's ground receiver station or cable system, has great potential for use and misuse.

DBS will have the unique capability to provide television and video services to residents of remote areas who are not currently serviced by other broadcasting sys-

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11 The function of DBS is defined as "[a] radiocommunication service in which signals transmitted or retransmitted by space stations are intended for direct reception by the general public." 47 C.F.R. § 100.3 (1984).

12 Comment, The Economic Legal and Scientific Implications of Direct Broadcast Satellites, 7 Com. & L. 3 (1985) [hereinafter cited as Implications of DBS].

13 Christol, supra note 10, at 150. A single broadcast can cover an area of one million square miles and be received by millions of viewers. Id. The footprint of France's proposed DBS would cover the United Kingdom, Ireland, and most of Continental Europe. Satellite Progress and Problems Fill SCUC Agenda, Broadcasting, Sept. 3, 1984, at 39. For a discussion of overspill, see infra notes 142-154 and accompanying text.

14 For a discussion of fears relating to potential misuse of DBS, see infra notes 142-149 and accompanying text.
tems. Further, DBS could meet the increasing consumer demand for video programming by providing new channels and diversity in programming. DBS also has the potential to provide multi-language programming, high definition television ("HDTV"), data transmission, and educational programming, as well as jobs due to the increased size of the video market.

The potential benefits of DBS led to the FCC dete...

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16 Report and Order, 90 F.C.C. 2d at 681-682.

17 Id. at 682.

18 "HDTV is the name given to any video production system capable of producing pictures with twice the horizontal and vertical resolution of the existing television systems. (PAL, SELAM or NTSC) as well as a larger aspect ratio (width to height)." HDTV, DBS Standards, supra note 15, at 41. The attractiveness of HDTV is the superior quality of the picture, with little graininess, thus having a tremendous potential impact on the viewer. Implications of DBS, supra note 12, at 14. DBS is particularly suited to HDTV technology development for four reasons:

19 Report and Order, 90 F.C.C.2d at 682. Dennis Fraser, president of Ancom, sees DBS becoming a primary source for software services for home computer users. Satellite Progress and Problems, supra note 13, at 39. An exhibit at a satellite user convention showed how a DBS subscriber could receive specific programs directly from a host computer feeding the satellite. Id.

20 In re Application of Satellite Television Corp. to Construct an Experimental Direct Broadcast Satellite, Memorandum Opinion and Order, 91 F.C.C.2d 951, 969 (1982) [hereinafter cited as Memorandum Opinion and Order].
nation that DBS was in the best interest of the American public. Consequently, the FCC adopted interim DBS regulations to encourage development of the experimental technology. The FCC designed a flexible regulatory policy with minimal constraints to create a fertile environment in which DBS could flourish. The FCC regulations represent the ideological traditions of freedom of speech and private control of the communications media, and therefore take a somewhat fluid approach.

Foreign administrations in general share the excitement over DBS' potential capabilities. Many lesser developed countries currently without a national communications system hope that DBS will provide them with the technology they need at a price they can afford. Most countries desire affordable and assured access to the geostationary orbit in which the DBS must travel, but differing ideologies result in varying methods of achieving the equitable access. As a result, the international front has not heartily embraced the United States' policy of minimal regulation. The United states, consequently, has been forced to make adjustments in its policy to accommodate the views and needs of other nations.

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23 Proposed Policy Statement, 86 F.C.C.2d at 721.
26 First Advisory Report, supra note 3, at 2-11.
27 Id.
28 Id. "The U.S. approach to affordable services include competition, i.e. multiple providers of satellite services. Thus while we stress techniques to maximize use of the orbit and spectrum, other nations may find the trade-offs in more elaborate technology and higher costs unattractive." Id. at 4-2.
Enterprises involved in DBS will have enormous amounts of capital invested in research, hardware and programming that will need to be protected.31 DBS enterprises, as United States entities, must comply with the domestic regulatory framework, including the FCC rules specifically adopted for DBS, as well as traditional areas of business regulation such as liability, antitrust and copyright.32 As entities exploiting outer space resources for private economic gain, DBS system operators and customers must further comply with international regulations.33 Because the international regulations may be formulated upon goals other than the promotion of free enterprise, it is important for DBS related companies to understand the relevant regulations and how these regulations may affect business decisions.

This Comment, in Section II, identifies key issues of interest to United States DBS companies and seeks to summarize the development and current state of national and international regulations relating to these issues.34 Section III contains a projection of the impact of the current regulations on the development of DBS and stresses private enterprise concerns in making DBS an economic success as an international communications device.35

31 The STC application projected the cost for system construction and first year operating expenses to be about $683.6 million. Memorandum Opinion and Order, 91 F.C.C.2d 953, 957 (1982).
33 United States enterprises are affected by international law in two ways. First, treaties to which the United States is a signatory become part of the positive law of this country. See U.S. CONST. ART. VI. Second, the United States' space programs are designed to comply with international law. See, e.g., COMSAT, supra note 7. See also supra note 9.
34 See infra notes 36-199 and accompanying text.
35 See infra notes 200-234 and accompanying text.
II. THE REALM OF REGULATION

The development of the current regulatory scheme for DBS has evolved in a piece meal fashion over a period in excess of twenty years. Four basic reasons exist for the fragmented development. First, since the launching and orbiting of satellites require the exploitation of outer space, international treaties, particularly treaties relating to outer space, must be complied with in the development of national as well as international regulatory frameworks. Unfortunately, the treaties do not always directly address DBS systems and some of the unique issues posed by use of DBS technology. Second, since the geosynchronous orbit in which the DBS must travel is a potentially limited space resource, conflicts regarding the optimum method of providing equitable access to the orbits and frequencies have hindered development of a cohesive regulatory scheme. Third, the unique capability of DBS to transmit transnational broadcasts has aroused not only excitement over its potential to provide low-cost communications systems, but also fear that the power will be used to transmit propaganda and violate national sovereignty. Fourth, and perhaps most importantly, national and international organizations have attempted to regulate DBS in the absence of proven technical information. As a result, the organizations were forced to rely on estimates as to the feasibility of the DBS technology and the potential utilization of the geosynchronous orbits. The resulting regulation is a series of compromises, on both the domestic and international

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56 See, C. CHRISTOL, DTB, supra note 29, at 617-703.
57 See supra note 38.
58 See infra notes 155-199 and accompanying text.
59 See infra notes 113-141 and accompanying text.
60 See infra notes 142-154 and accompanying text.
62 Id. See also Proposed Policy Statement, 86 F.C.C.2d at 747-49 (FCC discusses lack of technical standards in the interim DBS regulations).
fronts, designed to promote the development of DBS technology while preserving national sovereignty and the right to equitable access. The compromise regulations may well have a generative effect on the as yet unproven technology. They may also allow early DBS system operators and customers to erect insurmountable entry barriers to later potential DBS enterprises. The current compromise regulations may instead threaten the continued development of the medium by the interim nature of the rules and significant areas of legal protection left unaddressed by the regulations.

A. Regulation and Classification by the FCC

1. DBS and the Communications Act

The cornerstone of the United States' communication law is the Communication Act of 1943, which establishes the FCC as the national regulatory authority for the broadcasting industry. The Congressional grant of power authorizes the FCC to promulgate rules and regulations to promote the availability of efficient world-wide radio communication facilities to the people of the United States. The private sector controls the communications industry itself, but private citizens cannot own the frequency bands on which the signals are transmitted. The Commission grants and modifies licenses in the public industry to equitably distribute radio services. Tradition ally, the FCC has followed a policy of localism in achieving an equitable distribution of radio and television

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43 Christol, supra note 10, at 150-54.
44 For a projection by the FCC, see 86 F.C.C.2d at 721 (stating that flexibility in regulations will best serve DBS development).
45 See infra note 242 and accompanying text.
46 See infra notes 238-241 and accompanying text.
48 Id. at § 151.
49 First Advisory Report, supra note 3, at 48. Section 303 of the Communications Act gives the FCC the responsibility to allocate frequency bands among various users and to assign rights for the use of specific frequencies. 47 U.S.C. § 303 (1982).
Localism refers to the assignment of broadcast licenses on the basis of a local community service area: the policy results in programming of a local character.\(^{52}\)

DBS, by its nature, is not "local" broadcasting.\(^{53}\) In deciding that it had the power to regulate DBS, the FCC construed the 1934 Act grant of power broadly and placed the ultimate emphasis on the distribution of service, rather than on the mechanics of licensing, to attain the statutory goals.\(^{54}\) While localism is often an effective means of distribution, the 1934 Act does not foreclose other means of efficiently distributing radio services.\(^{55}\) Interpreting the 1934 Act so as to preclude regulation of DBS by the FCC because of DBS' capacity to broadcast over a large area would defy the obvious statutory intent.\(^{56}\)

Prior to assigning frequencies for the development of a new service, the FCC must make a preliminary determination that the service is in the public's best interest.\(^{57}\) The FCC concluded, on the basis of DBS' capability to provide new consumer services over a wide area of distribution, that DBS met the statutory requirements of a public interest determination.\(^{58}\) Additionally, the FCC balanced the potential capabilities of DBS against the interests of two groups which claimed potential harm by the entrance of DBS into the broadcast market: current terrestrial users of the frequencies to be allocated to DBS and current local

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\(^{51}\) National Ass'n of Broadcasters v. F.C.C., 740 F.2d 1190, 1198 (D.C. Cir. 1984) (court upheld FCC's authority to depart from localism in achieving statutory goals); Proposed Policy Statement, 86 F.C.C.2d at 737.

\(^{52}\) Proposed Policy Statement, 86 F.C.C.2d at 685-86.

\(^{53}\) See supra notes 11-13 and accompanying text.

\(^{54}\) Proposed Policy Statement, 86 F.C.C.2d at 736-37. "These broad powers have been repeatedly construed as an intent by the Congress to endow the Commission with wide discretion in deciding how best to utilize all of the nation's airwaves to attain the statute's goals." Id. Accord Nat'. Ass'n. of Broadcasters, 740 F.2d at 1198 (court confirmed FCC's authority to adopt a flexible approach).

\(^{55}\) Proposed Policy Statement, 86 F.C.C.2d at 737.

\(^{56}\) Id.

\(^{57}\) 47 C.F.R. § 100.15(c) (1985).

\(^{58}\) Report and Order, 90 F.C.C.2d at 680-83.
The Commission allocated a specific portion of a frequency band to interim DBS systems, requiring the current terrestrial operators to make adjustments for non-interference or to relocate to another band within five years. The expense of relocating to another frequency band is great and rests on the shoulders of the terrestrial users. The Commission expressed its belief that the strong incentive of eliminating signal interference would result in DBS operators compensating current users for the costs of relocation. The FCC also proposed that equipment replacement and depreciation might partially offset the relocation costs.

In establishing DBS regulations, the FCC also considered the interests of local broadcasters. A significant concern in the consideration of any new technology is its impact on existing industry forms. A new technology, however, cannot be repudiated simply because it competes with existing technologies and organizations. The Commission must consider the economic effect of a new service only if strong evidence exists that consumer injury

59 See generally, Report and Order, 90 F.C.C.2d at 686-706.
60 Id. at 692-94. The Commission allocated the 12.2-12.7 GHz band to interim DBS systems. Id.
61 Id. The cost of moving to another frequency could range from $1,000 - $88,000. Id. at 727.
62 Proposed Policy Statement, 86 F.C.C.2d at 734. Compensating a current user for the costs of moving to another band is only one alternative proposed by the FCC. Two other alternatives include developing equipment to overcome signal interference and delaying DBS operations until the terrestrial user relocates. Id. at 733-34.
63 Id. at 733. This argument has been criticized on the ground that replacement or depreciation will not come close to the relocation cost. Note, Up in the Air: An analysis of the FCC's DBS Policy, 11 BROOKLYN J. INT'L L. 127, 138 (1985) [hereinafter cited as Up in the Air].
64 Comment, Who's the Captain Kirk of this Enterprise?: Regulating Outer Space Industry Through Corporate Structures, 18 U.C.D. L. REV. 795, 821 (1983)[hereinafter cited as Who's the Captain Kirk?]. In selecting the appropriate corporate structure to regulate a space industry, the government may need to consider the possibility of financially assisting domestic businesses to compete in international markets and the possibility of rendering current earth based entities obsolete. See id.
65 Report and Order, 90 F.C.C. 2d at 689.
will result. Relying primarily on three market research studies of the projected market penetration of DBS, the Commission concluded that DBS would have a negligible impact on local broadcasting. The consumer benefits of DBS, particularly the service of remote areas, far outweighed the "speculative" claims of injury by current terrestrial users and local broadcasters.

2. The Interim Regulations

The FCC adopted interim DBS rules in June 1982. The interim regulations take a minimalist approach of

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66 Id.

Plainly it is not the purpose of the Act to protect a licensee against competition but to protect the public. Congress intended to leave competition in the business of broadcasting where it found it, to permit a licensee who was not interfering electrically with other broadcasters to survive or succumb according to his ability to make his programs attractive to the public.

Id. (quoting FCC v. Sanders Bros. Radio Station, 309 U.S. 470, 475 (1940)).

67 Report and Order, 90 F.C.C. 2d at 689-92. The three studies relied on by the FCC are as follows: Ayvasion, Blake & Cantor, Direct Broadcast Satellites: Preliminary Assessment of Prospects and Policy Issues, Kalba Bown Associates, cited in Proposed Policy Statement, 86 F.C.C. 2d at 738 (the study found that the projected effect of pay-DBS on local advertiser supported broadcasters was minimal); National Cable Television Association, Inquiry into the Economic Relationship Between Television Broadcasting and Cable Television, cited in Proposed Policy Statement, 86 F.C.C. 2d at 739 (the study found that cable systems engaged in retransmission of over the air signals caused less than a 10% decline in local audiences); Satellite Television Corp., Pay Television Services via Direct Broadcast Satellites: Demand and Impact in the 1980s, Arthur D. Little, Inc., cited in Proposed Policy Statement, 86 F.C.C. 2d at 738 (the study found that the audience diversion from local broadcasting to pay-DBS would be minimal).

68 Report and Order, 90 F.C.C. 2d at 689, 691. The FCC analogized the competitive effect of DBS on local broadcasters to the effect of cable television which has not justified FCC intervention. Id. at 689. See Malrite TV of New York v. FCC, 652 F.2d 1140 (2d Cir. 1981), cert.denied, 102 S. Ct. 1002 (1982) (where the effect of cable on local broadcasters was not so substantial as to justify Commission intervention). See also supra note 63.

69 Report and Order, 90 F.C.C. 2d at 692. The basis of the local broadcasters' argument was that loss of audience would result in the loss of advertising revenues, causing broadcasters to reduce quality, locally-produced programming and public service programs, all to the injury of the consumer. Id. at 686-87.

70 Id. at 683. The regulations were termed "interim" because of the desire of the FCC to maintain flexible procedures and the pending RARC '83 discussion of assignment of orbital slots. Id. at 683-84. For a discussion of RARC '83, see infra notes 129-132 and accompanying text.
"open entry," reflecting the deregulation philosophy evident in other areas of the communications industry.\textsuperscript{71} The FCC, considering the enormous capital investment required and the unproven state of DBS technology, concluded that encouragement of DBS entry into the market warranted minimal technical and market restrictions.\textsuperscript{72} The approach of the Commission is to allow regulations to develop in response to market forces.\textsuperscript{73} DBS enterprises were, however, put on notice that the FCC reserved the right to modify the regulations if adverse consumer effects should occur as a result of the open entry policy.\textsuperscript{74}

The Commission determined that rigid classification of DBS systems would inhibit the burgeoning industry.\textsuperscript{75} Under the interim rules, DBS applicants were not required to conform to any particular existing model of a broadcast entity, but could choose the regulatory scheme under which their DBS system would be governed.\textsuperscript{76} DBS systems could thus function as broadcasters, common carriers, or combination broadcasters/common carriers.\textsuperscript{77} DBS may function as a broadcaster, like traditional local radio and television stations, by controlling the programming content of the signals it transmits for general public reception.\textsuperscript{78} Broadcasters are subject to special public interest requirements in exchange for private control of the industry.\textsuperscript{79} Alternatively, DBS may function as a common

\textsuperscript{71} See supra notes 1-5 and accompanying text.
\textsuperscript{72} Report and Order, 90 F.C.C.2d at 714. See also First Advisory Report, supra note 3, at 4-8.
\textsuperscript{73} Report and Order, 90 F.C.C.2d at 714.
\textsuperscript{74} Id. at 711.
\textsuperscript{75} Id. at 708. "The imposition of an \textit{a priori} classification would determine the nature of the service at the outset and thus would largely foreclose the possibility of gathering valuable experimental data." Id.
\textsuperscript{76} Id.
\textsuperscript{77} Id. at 709. "We see no reason . . . why a DBS operator could not function as broadcaster with respect to some channels and a common carrier with respect to others." Id.
\textsuperscript{78} Id.
\textsuperscript{79} Natl. Ass'n of Broadcasters, 740 F.2d at 1199. Special public interest requirements impose restrictions on program content and mandate equitable access to political candidates. See, e.g., 47 U.S.C. § 73.1940 (1984) (broadcasts by candidates for political office); 47 U.S.C. § 73.1930 (requiring political editorials).
carrier by merely transmitting the signals of customers who create or control the programming ("customer programmers"). Common carriers are not subject to the public interest requirements imposed on broadcasters, but, in exchange, relinquish all control over the programming. In addition, DBS may function as a combination broadcaster/common carrier by transmitting signals carrying programming which it controls as well as transmitting signals of customer programmers. The FCC exempted all customer programmers from public interest requirements even where the DBS itself was a common carrier and not subject to the traditional broadcaster restrictions.

The Commission also refused to apply traditional broadcast restrictions on ownership and control. Diversification of ownership in other areas of broadcasting purportedly satisfies First Amendment requirements for diversity in programming and serves to prevent the possession of excessive market power and ensuing antitrust violations. The FCC concluded that monopoly power in the video programming market by one DBS system would be precluded by projected fierce competition and that imposition of multiple channel ownership restrictions would decrease chances for the financial success of DBS.

Following the same non-regulatory approach applied in

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82 Report and Order, 90 F.C.C.2d at 709. See supra note 77.
83 Report and Order, 90 F.C.C.2d at 711.
85 Report and Order, 90 F.C.C.2d at 711. The FCC concluded that DBS will increase the diversity of voices, thus satisfying First Amendment goals. Id. at 713.
86 See Report and Order, 90 F.C.C.2d at 712 (where the FCC stated that competition would prevent monopolistic pricing and abuses of market power). Implicit in this assumption is that the relevant market, for antitrust analysis, would be video programming rather than DBS systems.
other areas of interim DBS rules, the Commission declined to impose any technical standards other than those imposed by international agreements.\(^8\) The application process for DBS is likewise flexible. Applicants must describe the type of service to be provided, the technology to be employed, and all other pertinent information.\(^8\) The application need not be presented in a specific format and may even be presented in narrative form.\(^8\) There are no specified financial requirements for the preliminary application.\(^9\) Upon approval of the application, the FCC will grant a construction permit ("CP").\(^9\) After obtaining a CP, the DBS system must meet a "diligence" test.\(^9\) The "diligence" test requires a showing of financial ability to complete the project, commencement of construction or execution of a contract for construction of a satellite within one year of the grant of a CP, and operation of the DBS satellite within six years of the grant of the CP.\(^9\)

The FCC maintained strict control in only one area of DBS regulation — frequency and orbit allocation.\(^4\) Since frequencies and orbits are limited resources with indefinable market values, the FCC concluded that market forces would not yield optimal solutions.\(^5\) The decision of the FCC rested on two overriding factors. First, international agreements govern orbit and frequency allocations.\(^6\) Second, allocation requires policy judgments that depend

\(^8\) Report and Order, 90 F.C.C.2d at 715. Subsequently, DBS firms have formed a committee to develop voluntary technical standards for the DBS industry. \textit{Justice Will Not Challenge DBS Standards Group, Broadcasting}, Oct. 22, 1984, at 50. The committee is forming technical standards to promote compatibility among DBS systems as well as to promote market entry and consumer benefits. \textit{Id.}

\(^9\) Report and Order, 90 F.C.C.2d at 719.

\(^1\) \textit{Id.}

\(^2\) \textit{Id.}

\(^3\) \textit{Id.} Before granting the CP, each application will be placed on public notice for forty-five days, during which the public is invited to make comments. \textit{Id.}

\(^4\) \textit{Id.} The FCC requires the diligence test in lieu of stringent financial showings before the CP is granted. \textit{Id.}

\(^5\) \textit{Id.}

\(^6\) \textit{Id.} at 718.

\(^7\) Proposed Policy Statement, 86 F.C.C.2d at 749. \textit{See infra} notes 113-141 and accompanying text.

\(^8\) Report and Order, 90 F.C.C.2d at 718.
on public interest considerations. Applicants may request frequencies and orbital positions and their preferences will be taken into account. If requests conflict, the FCC will consider all frequencies and orbits as equal and will make an assignment on the basis of oral evidentiary hearings. Comparative hearings to resolve allocation will not be available as long as unassigned frequencies and orbits remain.

3. Judicial Review of the Interim Regulations

Following the adoption of the interim DBS regulations, Satellite Television Corporation ("STC") made the first application for a DBS construction permit. The Commission granted the STC construction permit. The National Association of Broadcasters ("NAB") filed suit against the FCC claiming the FCC exceeded its power by implementing interim DBS regulations and granting the DBS application of STC. The Court of Appeals for the District of Columbia Circuit generally approved the Commission's interim regulations and entirely approved the FCC's grant of the STC application. The court held that the FCC exceeded its power only in granting DBS customer programmers exemption from broadcast public interest requirements. The court further held that transmissions from a DBS system fit the definition of

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97 Id. at 719.
98 Id. at 718.
99 Report and Order, 90 F.C.C.2d at 719. Courts have generally held that the Communications Act requires comparative hearings when the number of qualified applicants exceeds the available spectrum space and there are genuine and substantial issues of fact. Johnston Broadcasting Co. v. FCC, 175 F.2d 351 (1949).
100 Report and Order, 90 F.C.C.2d at 719.
101 Memorandum Opinion and Order, 91 F.C.C.2d 953 (1982). STC is a wholly-owned subsidiary of the Comsat Corporation, which is authorized by COMSAT to engage in satellite communications services. Id. at 953 n.1.
102 Nat'l Ass'n of Broadcasters, 740 F.2d at 1196.
103 Memorandum Opinion and Order, 91 F.C.C.2d at 954.
104 Nat'l Ass'n of Broadcasters, 740 F.2d at 1197. See also United States Satellite Broadcasting Co. v. FCC, 740 F.2d 1177 (D.C. Cir. 1984).
105 Nat'l Ass'n of Broadcasters, 740 F.2d at 1195.
106 Id. at 1201.
"broadcasting" even if special equipment is required for reception.107 According to the court, when a common carrier DBS system leases its channels to a customer programmer, one of the parties is a broadcaster and thus subject to the public interest requirements.108 The court did not hold that all customer programmers were broadcasters and suggested alternative methods of FCC regulation consistent with statutory demands.109 Furthermore, the court made it clear that some uses of DBS will not constitute broadcasting.110 For example, where the programming is of limited interest to a small class of subscribers, the DBS program will not be considered a "broadcast."111 The great majority of DBS applicants — those seeking to provide direct-to-home service and retaining control over the programming — are broadcasters under the interim regulations and remain unaffected by the court's decision.112

B. Orbit and Frequency Allocation

The management and utilization of the limited frequency spectrum and orbital resource is subject to the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Outer Celestial Bodies113 (~Outer

107 Id. at 1204. The test for whether a particular activity is "broadcasting" is "whether the programming is 'of interest to the general . . . audience'" (citing Functional Music, Inc. v. FCC, 274 F.2d 543, 548 (D.C. Cir. 1956), cert. denied, 361 U.S. 813 (1959) (emphasis in original). Id. at 1201. See infra note 186 and accompanying text.

108 Nat'l Ass'n of Broadcasters, 740 F.2d at 1201.

109 Id. at 1205. "For example, each satellite could be licensed on a common carrier basis and the lessee of each channel, even if the satellite owner, licensed as a broadcaster . . . [I]f a DBS owner leases time slots on a single channel rather than the channel as a whole, it may make more sense to make the satellite owner responsible for compliance with a broadcaster's statutory obligations." Id.

110 Id.

111 Id. (citing Functional Music, Inc., 274 F.C.C. 543 (affirming non-broadcast treatment for transmission of background music to schools and retail institutions)).

112 Nat'l Ass'n of Broadcasters, 740 F.2d at 1205. See Report and Order, 90 F.C.C.2d 709, 710 n.82.

113 The Treaty on Principles Governing the Activities of States in the Explora-
Space Treaty”) and the radio regulations of the International Telecommunications Union (“ITU”).114 The Outer Space Treaty was drafted to ensure that exploration and use of outer space are carried out in the interest of all mankind, in the pursuit of peace, and without claims of national sovereignty.115 Therefore, the orbits and spectrums are res communis and may be utilized by states operating geostationary space objects as long as the state has no intent to permanently appropriate the orbit or spectrum.116

The primary responsibility for the regulation of orbital and spectrum allocation and use rests with the ITU through its World Administrative Radio Conferences (“WARC”).117 Formal results of the WARCs take the form of regulations which, when approved by the member nations, have the force of international treaties.118 The ITU, however, has no enforcement powers.119 States, motivated by an interest in orderly telecommunications systems, voluntarily participate in WARCs.120 The primary function of the ITU is the technical coordination of worldwide telecommunication by eliminating signal interference.121
In 1971, when the ITU made prior assignments of geostationary orbits, only the United States and the Soviet Union possessed the technological capability to launch a communications satellite. The ITU essentially made assignments on a "first-come, first-served" basis, but expressed a clear intention that such assignments not be construed as permanent property interests. Since 1971, the WARC s have become a battleground for countries with divergent cultural and socio-political goals. Developing countries began to recognize the potential of satellite technology to meet their needs for telecommunications systems. At the same time, the developing countries feared that the geostationary orbital space would be filled by the time they either purchased or developed the required technology. Though the ITU made attempts to assure developing countries that the space resources would be made available to them in the future as their needs required, the attempts were largely unsuccessful. At WARC '79, the ITU adopted a resolution to reappraise the largely ad hoc mechanisms for awarding orbit and spectrum positions.

Region 2 countries of the ITU, those in the Western

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122 Levy, supra note 29, at 172.
124 First Advisory Report, supra note 5, at 4-3.
125 Id. at 2-11 - 2-12.
126 Id. See Space WARC Primed to Make History, Broadcasting, May 13, 1985, at 82.
127 C. Christol, Int’l Legal Regime, supra note 123, at 568.
128 Resolution No. 3, Relating to the Use of Geostationary Satellite Orbit and the Planning of Space Services Utilizing It, Radio Regulations, arts. 11, 13 at RES3-1. The purpose was: “To guarantee in practice for all countries equitable access to the geostationary orbit and the frequency bands allocated to the space service using it.” Id.
Hemisphere, held a Regional Administrative Radio Conference ("RARC") in 1983.\textsuperscript{129} The RARC '83 adopted a direct broadcast satellite plan providing for adequate allocation of the orbit/spectrum.\textsuperscript{130} A major accomplishment was the adoption of flexible regulatory procedures which provide for implementation of systems during the developmental stages without total compliance with the technical aspects of the plan.\textsuperscript{131} The RARC '83 decisions were not integrated into the radio regulations until WARC '85.\textsuperscript{132}

The ITU held Space WARC '85 for five weeks during August and September 1985 in Geneva.\textsuperscript{133} Extended debates resulted in a forced consensus regarding the orbit/spectrum allotment plan, but the conference defeated a strict \textit{a priori} plan advocated by a large number of developing countries.\textsuperscript{134} Under the compromise plan, each country will be allotted at least one orbital position within a certain frequency band.\textsuperscript{135} A WARC committee will assign orbital positions in other bands set aside for expansion using a multilateral planning method.\textsuperscript{136} A multilateral planning method is a procedure whereby new satellite systems will be considered in batches rather than on a case-by-case basis as in the current procedure.\textsuperscript{137} The new method calls for the sharing of technical adjustments required to accommodate a new system; under the prior system the burden was carried by the newcomer alone.\textsuperscript{138} The incorporation of the direct broadcast satel-

\textsuperscript{129} Federal Communications Commission, Second Advisory Committee Report, ITU WARC ORB '85, at 18 (Jan. 1985) [hereinafter cited as Second Advisory Report].

\textsuperscript{130} Id.

\textsuperscript{131} See DuCharme, supra note 41, at 278.

\textsuperscript{132} Space WARC Reaches Consensus, Broadcasting, Sept. 16, 1985, at 40.

\textsuperscript{133} Id.


\textsuperscript{135} Id. at 57. "The arc allotment plan is to be established in the 4500-4800 mhz band and in 300 mhz of the 6425-7025 mhz band, as well as in 500 mhz of the 10.70-13.25 mhz band." Id.

\textsuperscript{136} Id.

\textsuperscript{137} Second Advisory Report, supra note 129, at 27.

\textsuperscript{138} Curtain Going Up on Space WARC, Broadcasting, Aug. 5, 1985, at 75.
C. Overspill and Prior Consent

Central to the desire for equitable access to the geostationary orbit/spectrum is an awareness and appreciation of the power to communicate words and ideas. DBS has the power to transmit informational signals across national borders. Apart from the obvious advantages of this capability, some nations believe that DBS poses a threat to their national security, the integrity of their nation's culture, and the fulfillment of their national goals. Thus, countries have sought limitations on DBS in order to prevent signal overspill, control program content, and require prior consent before a DBS system transmits signals for reception within a receiving country's borders. Since 1959, the United Nations ("UN") has wrestled with the drafting of a set of principles regarding these DBS concerns.

The most recent resolution adopted by the UN is Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting ("General Assembly Resolution 37/92"). Countries not possessing DBS capabilities were concerned that in the

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139 Space WARC Reaches Consensus, supra note 132, at 42.
140 Id.
141 Id.
142 See supra notes 11-21 and accompanying text.
143 A. CHAYES & P. LASKIN, DIRECT BROADCASTING FROM SATELLITES: POLICIES AND PROBLEMS 7 (1975) [hereinafter cited as CHAYES & LASKIN].
144 Id.
145 Christol, supra note 10, at 142.
146 Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting, GA. Res. 92, 37 U.N. GAOR (100th plen.
near future DBS systems would become commercialized and interfere with domestic matters.\textsuperscript{147} General Assembly Resolution 37/92 addresses unavoidable overspill, prior consent, and, indirectly, control of program content.\textsuperscript{148} The desire to control content extends beyond restriction of direct propaganda to restriction of news, music, and cultural programs which originate outside a country’s borders.\textsuperscript{149}

The United States opposed General Assembly Resolution 37/92 on the basis that the requirement of prior consent or agreement would violate international law, particularly the Universal Declaration of Human Rights.\textsuperscript{150} Furthermore, the United States takes the position that it has a sovereign right to transmit international broadcasts and that restrictions on program content of American broadcasts would violate the First Amendment of the Constitution of the United States.\textsuperscript{151}

Thus far, the ITU has resisted efforts of the Soviet Union and lesser developed countries to expand ITU’s involvement into issues of satellite overspill and prior consent.\textsuperscript{152} However, the United States, particularly under

\begin{quote}
\end{quote}

\textsuperscript{147} Christol, \textit{supra} note 10, at 149.

\textsuperscript{148} \textit{Id.} at 145. The pertinent provisions of General Assembly Resolution 37/92 are:

\begin{quote}
G. Duty and Right to Consult
10. Any broadcasting or receiving State within an international direct television broadcasting satellite service established between them [when requested]. . . should promptly enter into consultations with the requesting State regarding its activities in the field of international [DBS]. . . .

J. Consultations . . . Between States
13. A State which intends to establish . . . [a DBS] service shall without delay notify the proposed receiving State . . . of such intention. . . . With respect to . . . the radiations of the satellite signal, the relevant instruments of the [ITU] shall be exclusively applicable.
\end{quote}

General Resolution 37/92, \textit{supra} note 146.

\textsuperscript{149} CHAYES \& LASKIN, \textit{supra} note 143, at 8.


\textsuperscript{151} Christol, \textit{supra} note 10, at 155; C. CHRISTOL, DTB \textit{supra} note 29, at 708.

\textsuperscript{152} \textit{Protecting Rights}, \textit{supra} note 32, at 708.
the Reagan administration, has been concerned over the increasing politicization of the ITU. The threat of withdrawal of the United States from the ITU may encourage the ITU to limit its involvement to the technical operation of radio services rather than the deciding of legal or political issues.

D. Signal Piracy and Copyright

Satellite technology has not progressed to the point where a satellite's "footprint" may be limited to the area it is intended to reach. As a consequence, signal spillover occurs. The use of DBS will increase the amount of signal spillover and create the greatest potential for unauthorized reception or "signal piracy." Under traditional broadcast contracts, the broadcaster pays royalties to the copyright owner on the basis of the intended broadcast area. DBS systems cannot contractually guarantee an intended area of reception because millions of viewers outside the intended area can receive the transmissions. Signal piracy produces two causes of concern for DBS systems: a potential loss in subscription fees to the DBS operator and loss of copyright earnings to the contributing artists and broadcast companies. Executives of leading American communications businesses identified copyright infringement as the most serious

153 Curtain Going Up on Space WARC, supra note 138, at 75.
154 Protecting Rights, supra note 32, at 213.
156 Protecting Rights, supra note 32, at 209.
157 Id. at 210.
158 Id.
159 The United States Copyright Office estimates that United States copyright holders are losing $1.5 billion in foreign earnings each year through unauthorized use of copyrighted works. Copyright Office Seeks to Stem Foreign Losses, BROADCASTING, Oct. 8, 1984, 81. The United States International Trade Commission estimates that each year the United States loses $6-8 billion in domestic and foreign earnings due to copyright and patent infringement and counterfeiting. Copyright Infringement Tops List of International Problems, BROADCASTING, Oct. 8, 1984, at 82 [hereinafter cited as Copy Infringement].
The domestic home satellite receiver market has been expanding at a rapid rate; estimates indicate that approximately 600,000 dishes are in place and are increasing at a rate of 30,000 to 60,000 a month. Since DBS can be received on a small dish, the number of dishes in congested urban areas will increase. Members of the home satellite receiver industry expressed a belief that charges of illegality of unauthorized reception of satellite signals discouraged some potential buyers. Thus, the potential for signal piracy continues to increase domestically and internationally.

The Cable Communications Policy Act of 1984 legalizes the reception of unscrambled satellite television signals by home viewers for personal use. The act provides criminal and civil penalties for the unauthorized reception of scrambled signals and creates a procedure whereby programmers may obtain compensation for their work by entering into agreements with manufacturers and dealers of home satellite receiver dishes. The satellite programmer thus has the option of either scrambling its signal or negotiating compensation through a product marketing scheme.

Four major multilateral treaties address copyright law: the Universal Copyright Convention, the Berne Convention for the Protection of Literary and Artistic Works

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160 Copyright Infringement, supra note 159, at 82.
161 Home is Where the Dish Is, BROADCASTING, Sept. 10, 1984, at 92.
162 Id. at 93.
163 Id.
164 47 U.S.C.A. § 605 (Supp. 1986). The new copyright policy is intended as an amendment to Section 605 of the 1934 Communications Act, supra note 47; Section 605 prohibits the unauthorized publishing or interception of any communication by wire or radio to the public. Id.
165 Backyard Dish Industry Gets Boost from Cable Bill, BROADCASTING, Oct. 22, 1984 at 84, 85. The compensation agreements, for example, could take the form of a royalty on the hardware sold by the manufacturer or dealer. Id.
166 Id.
(the "Berne Convention"),168 the Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations (the "Rome Convention"),169 and the Convention Relating to the Distribution of Programme-Carrying Signals Transmitted by Satellite (the "Brussels Satellite Convention").170 The United States belongs to the Universal Copyright Convention, but to neither the Berne Convention, the Rome Convention, nor the Brussels Satellite Convention.171 All of the above mentioned treaties fall short of adequately addressing the unauthorized interception of program carrying DBS signals.

The Universal Copyright Convention was drafted in simple form in order to include as many members as possible while not requiring major amendments to the domestic law of the member states.172 Article IV of the Universal Copyright Convention grants contributing artists the exclusive right to authorize reproduction of their works by any means.173 The Convention requires states to protect the copyright owners' rights but includes no details as to the methods of protection.174 Enforcement is further hindered by the requirement of a contract be-

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171 Signal Piracy, supra note 155, at 67 n.15.

172 Id. at 73. See Universal Copyright Convention, supra note 167, at Preamble.

173 Universal Copyright Convention, supra note 167, art. IV bis.

174 Art. I provides that "[e]ach Contracting State undertakes to provide for the adequate and effective protection of the rights of authors and other copyright proprietors. . . ." Id. at art. I. Art. X provides that "[e]ach Contracting State undertakes to adopt . . . such measures as are necessary to ensure the application of this Convention." Id. at art. X. Art. XV provides that a dispute between two Contracting States, not settled by negotiation, shall be brought before the International Court of Justice for determination. Id. at art. XV. See Signal Piracy, supra note 155, at 74.
tween the creator and the broadcaster. Most importantly, the definition of the term "broadcasting" makes it unclear whether the Universal Copyright Convention applies to satellite transmissions.

The Berne Convention possesses a similarly vague definition of broadcasting. The Convention provides protection only to authors of "literary and artistic works," thus failing to recognize the interests of performers, record producers, and broadcast organizations. The United States has not ratified the Berne Convention because adherence would conflict with existing domestic copyright regulations.

The Rome Convention addresses the rights of performers, record producers and broadcasters rather than the copyright owner of the original work. The protections granted by the Convention are subject to exceptions and reservations made by the Contracting States. The Rome Convention makes no mention of technical aspects of broadcasting or satellite transmissions. Furthermore, only countries which are members of the Berne Convention or the Universal Copyright Convention may become

175 See Protecting Rights, supra note 32, at 218.
176 Id. at 217. The traditional definition of broadcasting applies to transmissions which can be received directly by the public. The broader view, which would include DBS, is that broadcasting includes signals intended for direct reception by the public. Id. at 217 n.76. Compare infra note 186 and accompanying text with Nat'l Ass'n of Broadcasters, 740 F.2d at 1204 (where the court held that DBS transmissions constituted broadcasting even if special equipment was required for reception). See generally supra notes 107-112 and accompanying text.
177 Protecting Rights, supra note 32, at 219.
178 Id.
179 Signal Piracy, supra note 155, at 72. The areas of conflict in the Berne Convention include "automatic recognition of copyright without any formalities . . . and the retroactivity of copyright protection with respect to works which are already in the public domain of the United States." Id. at 72 n.49.
180 Id. at 74. See Rome Convention, supra note 169, arts. 7, 10, 13.
181 See Rome Convention, supra note 169, art. 16. The protection afforded by the Rome Convention varies from state to state depending upon the domestic legislation and reservations to the treaty. Signal Piracy, supra note 155, at 75.
182 Signal Piracy, supra note 155, at 75 n.75. See Rome Convention, supra note 169, art. 3.
members of the Rome Convention.\textsuperscript{183} The Rome Convention thus affords inconsistent protection in few countries capable of receiving the DBS signals.\textsuperscript{184}

The Brussels Satellite Convention was drafted specifically to address the copyright problems of satellite transmissions and holds the most promise for providing copyright protection to DBS transmissions.\textsuperscript{185} Similar to the other treaties discussed above, the definition of broadcasting makes it debatable whether or not DBS transmissions are excluded from copyright regulation.\textsuperscript{186} The central issue of the Convention was whether to grant rights to the broadcasting organizations or to the program contributors.\textsuperscript{187} The Convention compromised by requiring the member states to develop "adequate measures to prevent the distribution on or from its territory of any programme-carrying signal by any distributor for whom the signal emitted to or passing through the satellite is not intended."\textsuperscript{188} The vagueness of the Convention allows member states to decide which copyright protection to offer, but makes it unclear whether the copyright owner has standing to bring a proceeding against an unauthorized user in his own behalf.\textsuperscript{189} The Convention has

\begin{itemize}
\item \textsuperscript{183} Protecting Rights, supra note 32, at 221. See Rome Convention, supra note 169, art. 23.
\item \textsuperscript{184} Forty countries adhere to the Rome Convention. Signal Piracy, supra note 155, at 74 n.70. Disputes between two member states are to be referred to the International Court of Justice. Rome Convention, supra note 169, art. 90.
\item \textsuperscript{185} Signal Piracy, supra note 155, at 75-76.
\item \textsuperscript{186} Id. at 77 n.96. Article 9 states: "This Convention shall not apply where the signals emitted by or on behalf of the originating organization are intended for direct reception from the satellite by the general public." Brussels Satellite Convention, supra note 170, art. 3 (emphasis added). DBS transmissions are intended for direct reception from the satellite. See supra note 12 and accompanying text. The DBS signals could be covered by the convention if the special receiver equipment prevents the signal from being received by the "general public." See Signal Piracy, supra note 155, at 69. Delegates to the Convention proposed a change in the wording of Art. 9 to make it clear that the exclusion of DBS is not so broad as to exclude distributors who "pirate" program-carrying signals from conventional satellites and transmit the stolen signals from a DBS service. See Brussels Satellite Convention, supra note 170, at 1461.
\item \textsuperscript{187} Protecting Rights, supra note 32, at 222.
\item \textsuperscript{188} Brussels Satellite Convention, supra note 170, art. 2.
\item \textsuperscript{189} Protecting Rights, supra note 32, at 222.
\end{itemize}
not entered into force because only four states have ratified it. The United States Copyright Office has suggested prompt ratification of the Brussels Satellite Convention in order to internationally recognize the illegality of signal piracy.

E. Liability and Damage Claims

The Convention on International Liability for Damage Caused by Space Objects allows damage claims for violations of the Outer Space Treaty obligations. The state is the only party empowered to pursue damage claims against another state. Thus an individual claimant, corporation, or business enterprise must pursue damage claims in alternative forums. The state that authorizes the launch of a space object remains liable for damages caused by the object to aircraft in flight or to anything on the Earth's surface. Liability for damages to other space objects is based on a finding of fault.

The Convention on the Registration of Objects Launched into Outer Space imposes a duty on states to register objects that they launch into space. One purpose of the registration of space objects is to assist with identi-
fication of objects involved in damage claims. Each launching state is responsible for establishing and maintaining a registration system.

III. THE OUTLOOK FOR DBS

Although adoption of the FCC's interim rules for DBS caused an early flurry of application activity, few applicants are still working towards a launch in the near future. Some reports indicate that the lack of definite orbital/spectrum assignments has been a major obstacle in obtaining financial backing for DBS. Since the RARC '83 plan has been approved by the ITU and a strict a priori planning approach was defeated at Space WARC '85, the orbit/spectrum issue should no longer be an obstacle.

The FCC adopted a minimal set of interim regulations designed to encourage "open entry" into the DBS market. Until the interim regulations were approved by the Court of Appeals for the District of Columbia Circuit, the regulations provided a precarious foundation on which to build such an expensive venture. After affirmance by the court, more confidence in the longevity of the rulings appears to be justified. However, the court's decision to overrule the FCC's conclusion that customer programmers of common carrier DBS systems could be exempted from traditional broadcast obligations shows just how "in-

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199 Registration Convention, supra note 197, art. II.
200 Thinning Ranks of DBS Pioneers Heads for July 17, BROADCASTING, July 16, 1984, at 90. After the application of STC was approved, thirteen other applicants followed in the first round. Id. Eight applicants were granted construction permits. Id. Seven applicants met the January 12, 1984 deadline for the second round. Id. Only four first round applicants met the diligence test and were still in the running. DBS Ranks Cut in Half, BROADCASTING, Oct. 15, 1984, at 75.
201 See Space WARC Primed to Make History, supra note 126, at 90; Implications of DBS, supra note 12, at 25. STC had to withdraw from its DBS venture because of lack of financing and will reportedly take a $24 million pre-tax write off.
202 See supra notes 47-112 and accompanying text.
203 See supra notes 101-112 and accompanying text.
"term" the DBS regulations may be. Furthermore, the court has already warned DBS operators not to consider multiple-channel ownership an irrevocable property right. The FCC has expressed a reluctance to change the rules once a service is operating, but it appears the court will not let financial investments interfere with their decisions should the FCC exceed its authority.

The FCC correctly predicted fierce competition for DBS in the video/programming market. Local broadcasters and national television networks are performing well. Plans exist for laying high quality fiber optic links under the Atlantic and Pacific Oceans. The fiber optics could reduce most of the increased demand for international communication in the areas serviced by the optic links. Cable operators and pay-per-view companies are becoming more aggressive. Home Box Office ("HBO"), a subscription television programmer, plans to increase its market share and pre-empt the high-powered DBS by courting customers with home satellite receiver dishes in addition to its current cable customers. Less expensive, low power satellites are currently being developed into direct-to-home transmitters, requiring only slightly larger receivers than those needed for DBS reception. The competitors hope to capture the potential DBS customers before DBS gets the opportunity to begin

204 See National Association of Broadcasters v. FCC, 740 F.2d 1190 (D.C. Cir. 1984).
205 Id. at 1208-09.
206 See id.
208 Satellite Predictions Drop, BROADCASTING July 29, 1985, at 49.
209 Id.
210 See infra note 211 and accompanying text.
211 Home is Where the Dish Is, supra note 161, at 93.
212 The low power satellites that are being used as direct to home transmitters are referred to as Ku-band and C-band Satellites. See id. at 92-93; The Search for Ubiquity in Television, BROADCASTING, July 8, 1985, at 52 (stating that the establishment of Ku-band services will further impede DBS services' search for financial backing).
transmitting.218 The low power direct transmitting satellites may also divert some investors who would otherwise be attracted to DBS.214 Critics of DBS claim that satellite entertainment broadcasting will only be successful as an adjunct to cable.215 Cable operators already possess the equipment, the customers, and the people to handle the broadcast satellite business.216

The FCC imposed no technical requirements on DBS systems, and technical requirements imposed by the ITU are merely intended to reduce signal interference.217 Non-regulation was intended to encourage experimentation with state of the art technology.218 In response to the lack of regulations, DBS applicants have formed a trade association to establish private uniform technical standards.219 The DPS applicants hope to improve their chances for success in the market by promulgating technical standards to promote compatibility among DBS receiving equipment.220

Technical difficulties with power sources have plagued DBS satellites. The Japanese Broadcasting Corporation launched the first high-power DBS in January 1984.221 Shortly after launch of the DBS, two of its three transmission tubes failed.222 As a result, the Japanese DBS is broadcasting on only one channel instead of the two it anticipated.223 The transmission power also has a direct influence on the quality of the picture received by the

213 The Search for Ubiquity in Television, supra note 212, at 52.
214 Id.
215 USCI Stays Afloat with Cash from TCI, Broadcasting, Apr. 1 1985, 89.
216 Id.
217 See supra notes 47-127 and accompanying text.
218 See supra note 72 and accompanying text.
220 Id.
221 HDTV DBS Standards, supra note 15, at 42.
222 Id. Sophisticated power sources fuel the transmission tubes. Id. Feasibility studies of a DBS system for the Voice of America will explore solar and nuclear power as potential DBS power sources. USIA Funds VOA Study of DBS, Broadcasting, Sep. 3, 1984, at 40.
223 Id.
viewer. For example, a simulator test of STC's proposed 240 watt broadcasts, to be received on a one meter diameter dish, yielded pictures that were unacceptably noisy.\textsuperscript{224}

The dish antennae are also a major problem with satellite broadcasting.\textsuperscript{225} The dishes must be carefully mounted, strong winds may cause the dish to lose sight of the satellite, and many people find the dishes pose an aesthetic problem.\textsuperscript{226} Various companies are researching alternative antenna designs that are less vulnerable and obtrusive.\textsuperscript{227}

No firm, enforceable regulations exist to protect DBS transmissions from signal pirates and unauthorized use of copyrighted works.\textsuperscript{228} In fact, the Cable Communications Act allows the unauthorized reception of unscrambled signals.\textsuperscript{229} Scrambling signals increases the cost of the DBS system.\textsuperscript{230} Failure to scramble the signal will result in loss of subscriber fees. However, if the DBS system is supported by advertising dollars as well as subscriber fees, the increase in audience size may inflate advertiser revenues enough to offset the lost subscription fees.\textsuperscript{231}

Properly launching satellites into geostationary orbits may be a real cause of concern to DBS operators. Last year, three satellites with a total insured value of $282 million misfired, rendering them useless and lost in space.\textsuperscript{232} Insurance costs for satellites have consequently increased. Insurance premiums have been estimated to

\textsuperscript{224} Id.
\textsuperscript{225} Id.
\textsuperscript{226} Id.
\textsuperscript{227} Id. at 42-43. The alternatives include flat rectangular antennas and a variation of the phased-array planar antennas used on aircraft for radar. Id.
\textsuperscript{228} See supra notes 155-191 and accompanying text.
\textsuperscript{229} For a discussion of the Cable Communications Act, see supra notes 164-166 and accompanying text.
\textsuperscript{230} See The Search for Ubiquity in Television, supra note 212.
\textsuperscript{231} Home descrambler units will sell for around $300. Home is Where the Dish Is, supra note 161, at 93. Advertisers are currently taking advantage of the pan-European broadcasting of Sky, Rupert Murdoch's general entertainment channel. Ad revenue for 1985 is expected to be between one and two million pounds. European Satellite TV Launches Ads in Global Orbit, \textit{Adweek}, Dec. 23, 1985.
\textsuperscript{232} Implications of DBS, supra note 12, at 9.
constitute as much as twenty per cent of the cost of constructing and launching a satellite.\textsuperscript{233} High premiums are not the sole problem associated with satellite insurance; it is difficult to locate a carrier who is willing to insure the risk.\textsuperscript{234} In addition to insurance on the satellite itself, the DBS operator must purchase adequate liability insurance to meet statutory requirements.\textsuperscript{235}

Financial and technical problems have prevented DBS system from becoming operational. The lack of technical specifications in the interim regulations has required further research and additional funding. Uncertainty over orbit allocations has discouraged investment. Furthermore, while the DBS applicants struggle with the interim DBS regulations, the competition from other broadcast media has been growing fierce.

IV. Conclusion

Early critics of the interim FCC rules expressed a belief that the FCC acted hastily when it determined that DBS was in the best interest of the public and when it formulated the "open entry" policy.\textsuperscript{236} No concrete evidence existed then, or now, that DBS will provide diversity in programming and consumer sovereignty in the United States.\textsuperscript{237} DBS technology possesses the capability to broadcast to remote areas currently unserved by other communications systems, but it does not necessarily follow that private profit-seeking DBS enterprises will be motivated to serve those areas unless it is incidental to their transmissions to more populated, profitable areas.

Neither does it follow that total deregulation of an industry will result in consumer and economic benefit.\textsuperscript{238} Regulatory restrictions provide burdens and benefits.

\textsuperscript{233} Id. at 10.
\textsuperscript{234} Id.
\textsuperscript{235} See \textit{supra} notes 192-199 and accompanying text.
\textsuperscript{236} \textit{Up in the Air}, \textit{supra} note 63, at 144-47.
\textsuperscript{237} Id. at 136-39.
\textsuperscript{238} See \textit{supra} note 23 and accompanying text.
The FCC structured the DBS rules to minimize the burdens on the developing industry. However, in refusing to regulate, the FCC denied the DBS systems the benefits of regulatory protection. The enormous amount of capital required to develop a DBS system mandates regulations offering some security along with the freedom. The desire for security is evidenced by the DBS trade association's establishment of uniform technical standards. Under the FCC perspective these uniform standards may be viewed as private regulations developing in response to market forces. One may question if such trade association self-regulation is really in the best interests of competition and consumers. Trade association self-regulation is usually viewed as anti-competitive behavior in antitrust analysis. For the DBS operator there is no assurance that the regulatory framework will not be altered should DBS become very successful and acquire significant market power.

One commentator said that DBS is a technology in search of a market. This indeed seems to be true. The American enterprises, as opposed to private industry in other countries and foreign governmental organizations, possess the greatest potential for developing a functioning DBS system. American businesses have the advantage of experimentation in a free market as well as access to state of the art technology and potential investors who hope to make a large return. The one element missing is a consumer market. The competition in the domestic entertainment/communications market is great. Consumers

239 *Id.*
240 See *supra* notes 87, 219-220 and accompanying text.
241 *See* 90 F.C.C.2d at 714.
242 The potential anticompetitive results of trade association self-regulation include the erection of significant entry barriers to potential market participants, discouragement of innovative development, price fixing and the dissemination of information. *Justice, supra* note 226, at 50. See Chicago Board of Trade v. United States, 246 U.S. 231 (1918). "The true test of legality is whether the restraint imposed is such as merely regulates and perhaps thereby promotes competition, or whether it is such as may suppress or even destroy competition." *Id.* at 238.
243 *Satellite Progress, supra* note 13, at 39.
already have a wide choice of programming sources from which to choose. Breaking familiar habits of consumers is difficult, as evidenced by the tenacity of local radio and television programming in the face of syndications, network and cable television as well as other forms of video entertainment. American consumers, particularly the technology-aware potential DBS customers, are information and entertainment rich. Thus, the unique capabilities of DBS would not be fully utilized and DBS would be neither a financial nor informational success.

The undeveloped countries currently without communications systems are the best prospects for DBS services. These countries need the capabilities DBS can offer. Without competing systems, the initial investments are not quite so risky. Furthermore, the goal of sharing ideas and information can be met in a meaningful way. If the development of DBS depends solely on its prospects for economic success, the potential of DBS may never be fulfilled.

DBS technology deserves to be developed and utilized. The current technological problems of DBS, such as power sources and picture quality, the inability of private DBS applicants to secure financing in the face of insecure regulation, and an unproven consumer market indicate that DBS development must proceed under a model other than private enterprise. Many smaller countries with government-owned communication systems have already combined resources to promote DBS development. The benefits of DBS are not national but international. The FCC concluded that development of DBS systems was in the best interest of the American public, thus, the United States government has an obligation to assist in the development of this technology. A quasi-public corporation may be the best vehicle to meet this obligation. A quasi-public corporation would be financed by both the

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244 Id. at 39-40. An emerging pan-European project is one commissioned by the European Space Agency known as L-Sat. Id. at 40.
government and the private sector.\textsuperscript{245} Congress would have a role in the management of the corporation.\textsuperscript{246} The advantage to this model is the ability of Congress to balance such divergent interests as treaty obligations and national goals.\textsuperscript{247} A quasi-public corporation model would also assist in maintaining free services to the public and assuring broadcast services to residents of remote areas. Once the DBS service is launched and competing in the broadcast marketplace, control can be completely transferred to the private sector. The current domestic regulatory framework has not assisted DBS enterprises or consumers and has not furthered the goal of the worldwide sharing of information and communication. It is time for the FCC to reconsider the "open entry" DBS policy because DBS has not entered the skies.

\textsuperscript{245} For a thorough discussion of different corporation models for doing business in space, see \textit{Who's the Captain Kirk?}, supra note 64, at 795.
\textsuperscript{246} \textit{Id.} at 815.
\textsuperscript{247} \textit{Id.} at 816.